DOCUMENT DATA FORM — **Your Name: Nick Carin**

Document Title or Description (max. 254 characters): Circle: Same as cover (or fill in below)

Drawing book 8, chapter 2: Typical sections and details for concrete floor slab

Include work order no. and floor no. if applicable

Roll # DB03	**Doc. ID (report #, dwg. #):**	
Document Date: 1968-70	**Document Author Name:**	**Author Organization:** SHC&R

KEYWORDS – HIGHLIGHT ALL THAT APPLY

Level 1

Bankers Trust	Project 4	(WTC 1 - North Tower)	Add
Below Grade	Project 5	(WTC 2 - South Tower)	
Concourse	Project 6	WTC 3 - Marriot Hotel	
Electrical Substation	Project 7	WTC 4 - South Plaza Bldg.	
Liberty Plaza	Project 8	WTC 5 - North Plaza Bldg	
PATH Station	WFC 1 - Oppenhiemer Dow	WTC 6 - Customs House	
PATH Terminal	WFC 2 - Tower B	WTC 7	
Project 1	WFC 3 - American Express	WTC Complex	
Project 2	WFC 4 - Tower D	WTC Plaza	
Project 3			

Level 2

Accident analysis & risk	Fire protection	Misc. Performance Problems	(Structural)
Architectural	Fire service	News coverage	Tenant alterations
Data request	Landscaping	Police	Tenant Space
Emergency management	Management	Security	Add
Evacuation	Mech./elec.		

Level 3

1993 explosion	Cranes	Frame	Roof	Weight
A/E fitout	Criteria	Frame analysis	Safety	Weld detail
A-242	Dampers	Frequency	Schedule	Weld size
A-36	Debris	Fuel	Sculpture	Welding
A-497	Deck	Furniture layout	Security system	Wind
Aircraft impact	Deflection	Generators	Shear knuckle	Windows
Air cooled condensers	Demolition	Guidelines	Shear test	Yield strength
Analysis	Design	Gypsum board	Shear Stud	Add
Angles	(Detailing)	Hat truss	Shop drawings	(Drawing books)
Antenna	Doors	Human comfort	Shortening	
Artifacts	Drawings	HVAC	Slab	
Asbestos	Eastern States Steel	Index	Slurry wall	
Base plate	Egress	Inspection	Smoke control	
Beams	Elevator	Insulation	Smoke test	
Bid documents	Elevator Shaft	Job number	Spandrel beam	
Bid Invitation	Emergency communications	Joist	Specifications	
Bow tie	Equipment	L-50	Splices	
Bracing	Erection marks	Lighting	Sprinkler	
Bridging truss	Errors & Omissions	Loads	Stability	
Building code	Escalator	Maintenance	Stairways	
Calculations	Expansion joint	Marking	Standards	
Carpet	Exterior columns	Mesh reinforcement	Steel	
Ceilings	Fabrication	Mill inspection	Steel composition	
Certification	Family member	Model	Stiffness	
Chillers	Field survey	Mullion	Structural review	
Cladding	Fire alarms	Operations	Surveillance	
Collapse	Fireproofing	Paint	Survey	
Columns	Fire spread	Partition layout	Survivor	
Communication systems	Fire testing	Partitions	Tenant list	
Composite truss	Firetower	Photos	Tenant occupancy	
Computer output	Flag Pole	Pipes	Testing	
Computer program	Flammability	Plumbing	Tie	
Concrete	Floor	Prestressing	Tolerances	
Connections	Floor load	Probability, uncertainty	Transfer Girders	
Construction	(Floor slab)	Quality control	Triad	
Contract	Floor system	Ramp	Truss	
Core beams	Floor trusses	Reinforcing (strengthening)	Vestibule	
Core columns	Formwork	Renovation	Vibration	
Corrosion	Foundations	Repair	Walls	
Cracking	Fracture	Research & Development	Water supply	
			Weather	

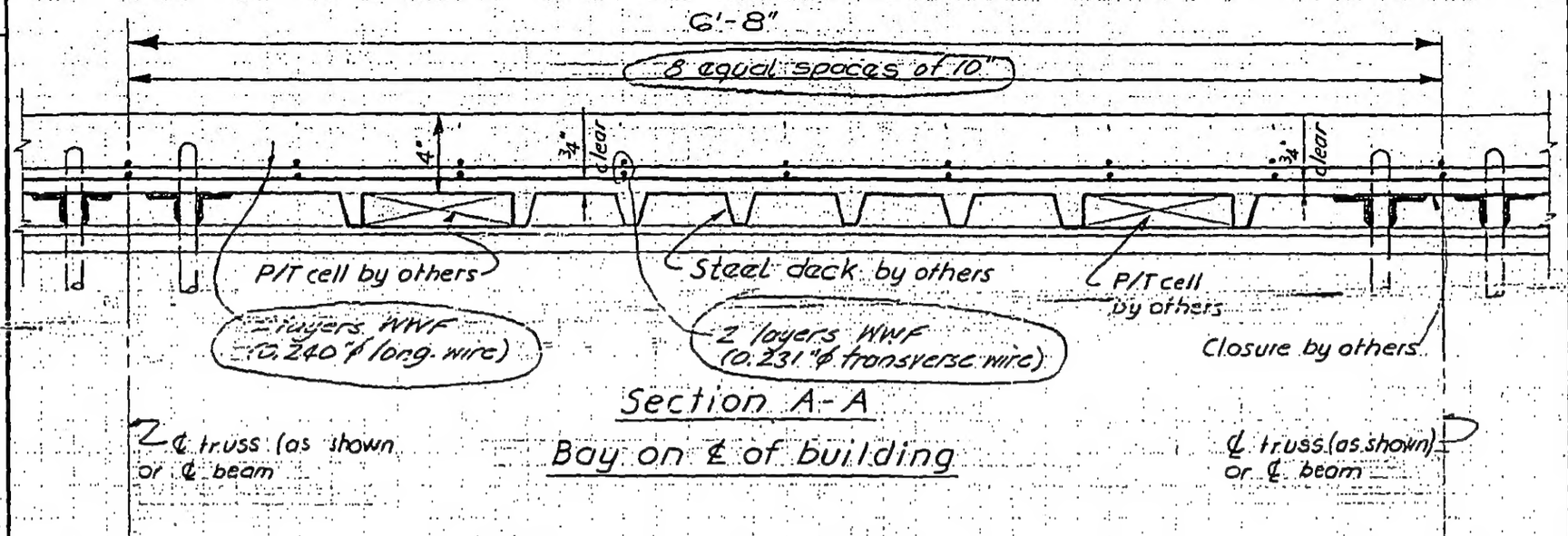
WTCI-1062-LERA

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - 4" SLAB ON STEEL DECK | DATE 3-1-68

REVISIONS

8/27/69

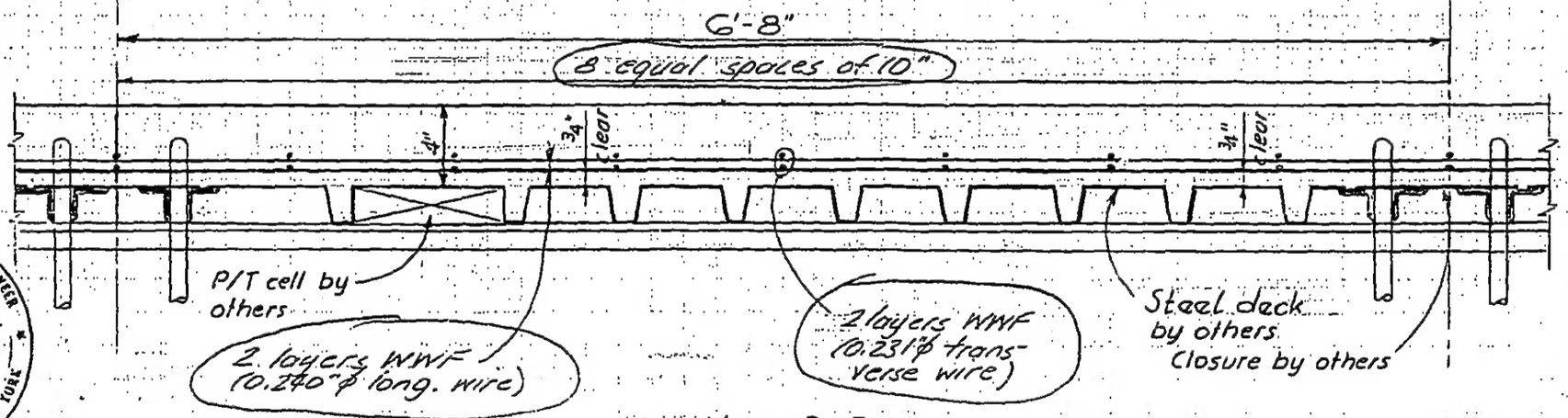


Section A-A

Bay on ℄ of building

℄ truss (as shown or ℄ beam

℄ truss (as shown) or ℄ beam



Section B-B

Typical Bay

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

CWP

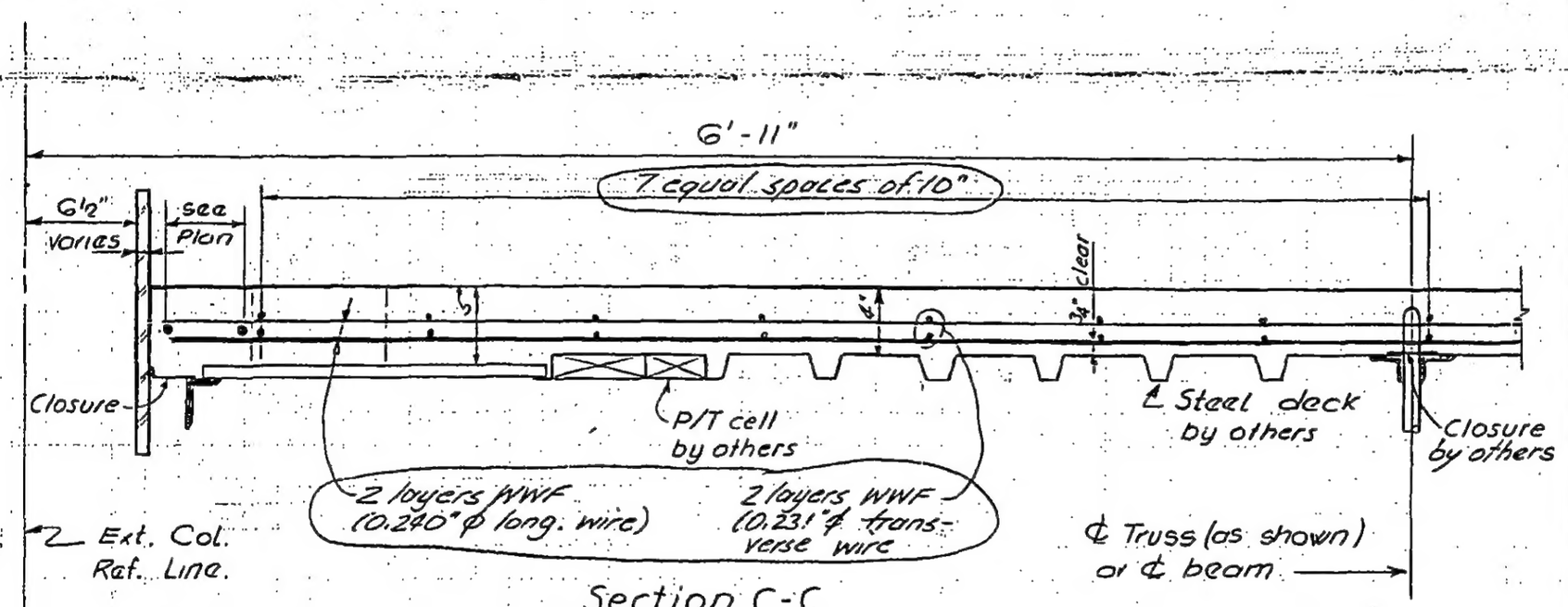
8-ABB-2.1

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - 4" SLAB ON STEEL DECK | DATE 3-1-68

REVISIONS

5/31/68
8/27/69



Section C-C

Edge bay

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

6 WAB

8-AB2-2.2

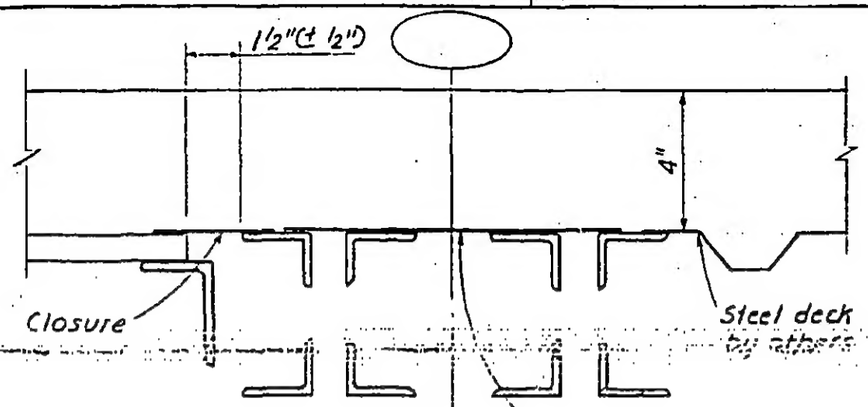
1062-L

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - 4" SLAB ON STEEL DECK | DATE 3-1-68

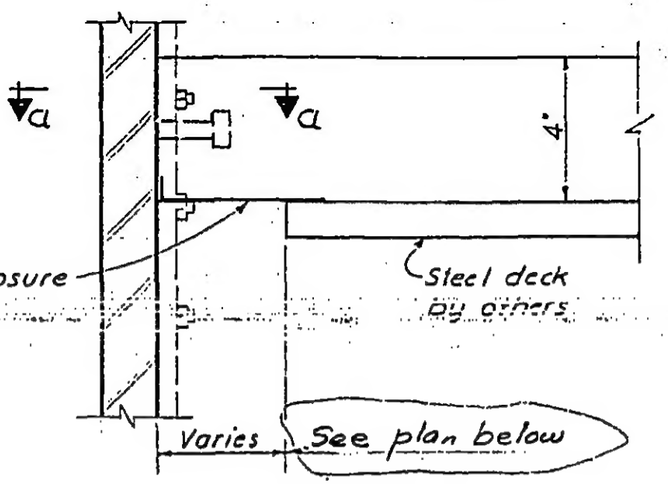
REVISIONS

5/31/68

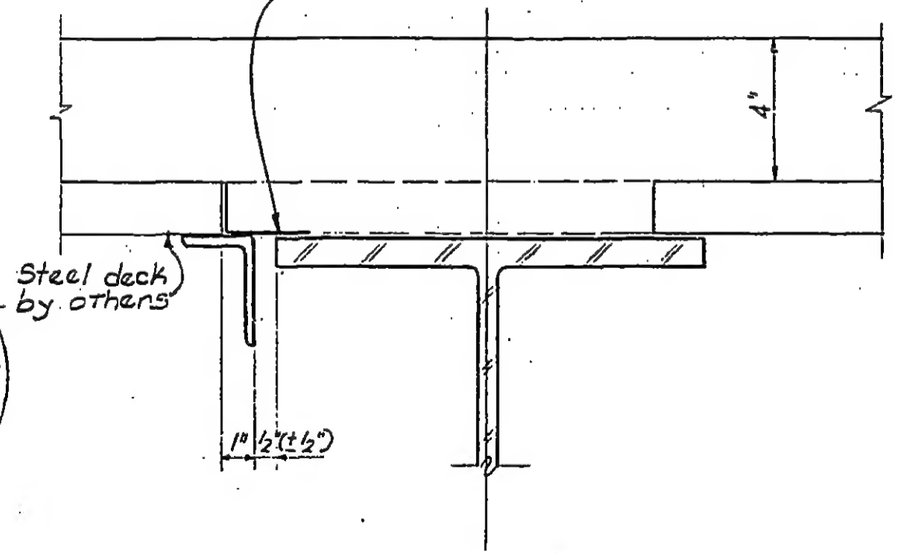


Note:
Reinf. not shown.

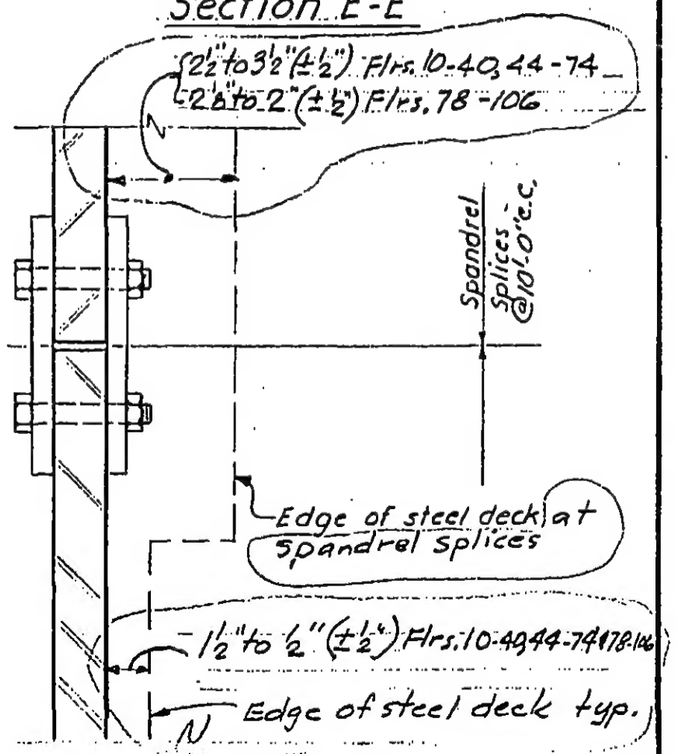
Section D-D



Section E-E



Section F-F



Plan Section a-a

Note:
Reinforcing not shown.

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
OF THE STATE OF NEW YORK

7

8-AB2-2.3

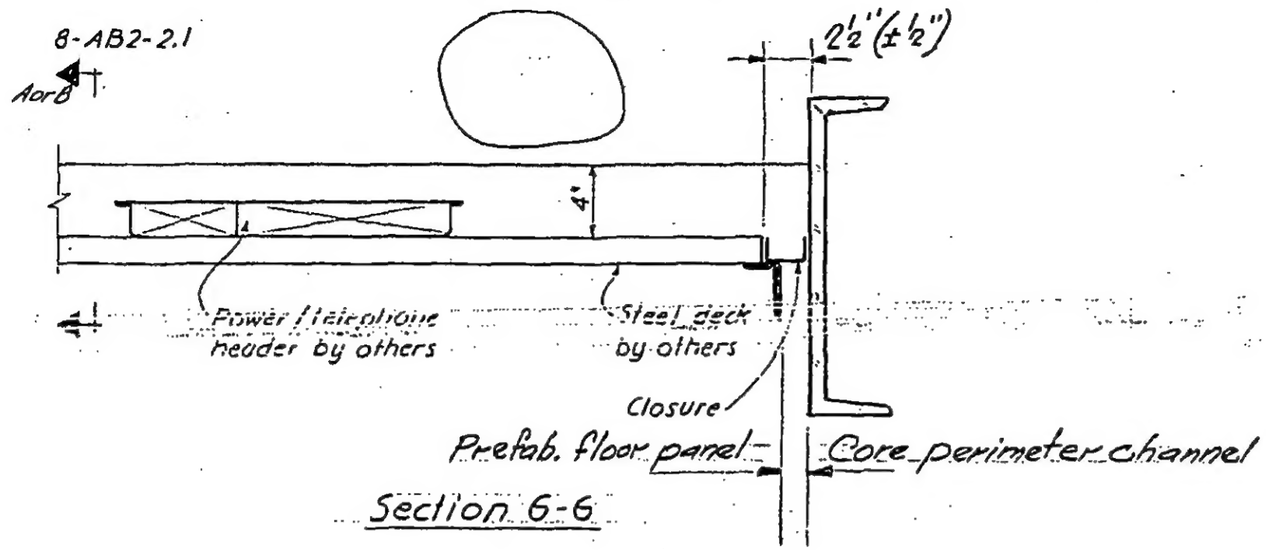
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - 4" SLAB ON STEEL DECK | DATE 3-1-68

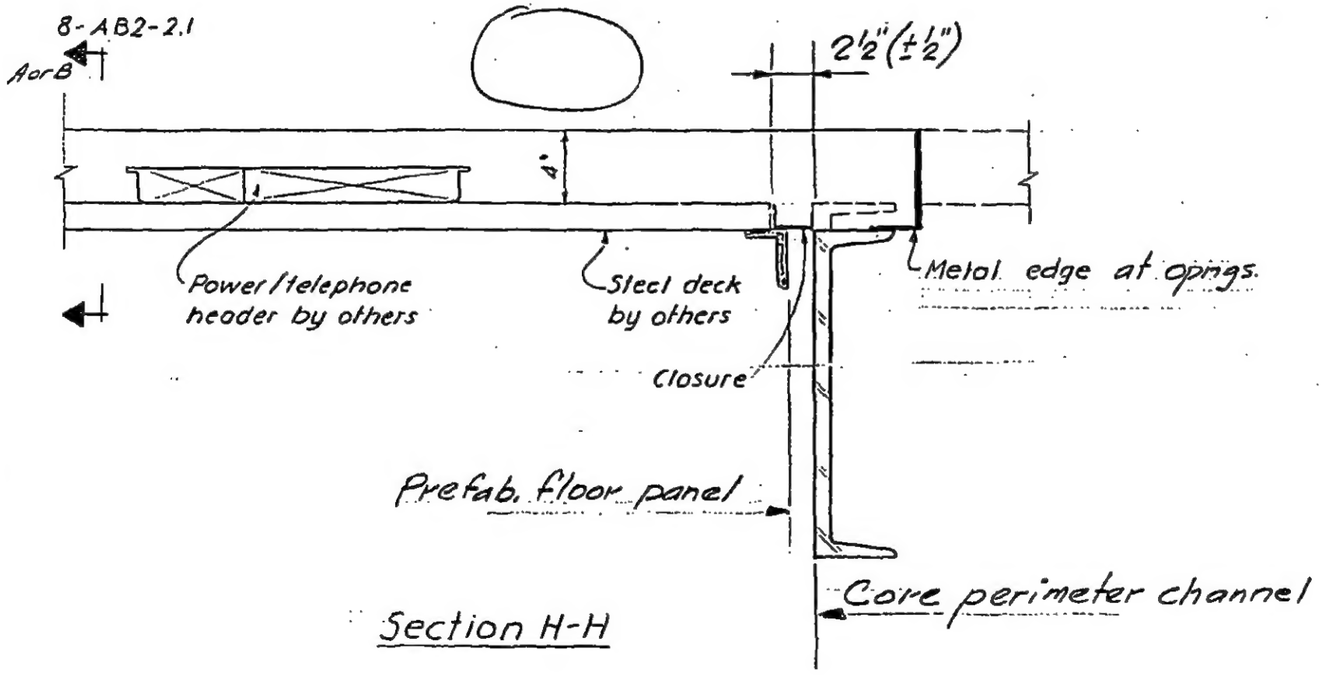
REVISIONS

5/31/68

3-12-69



Section 6-6



Section H-H

Note:
Reinforcing not shown.

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

8-AB2-2.4

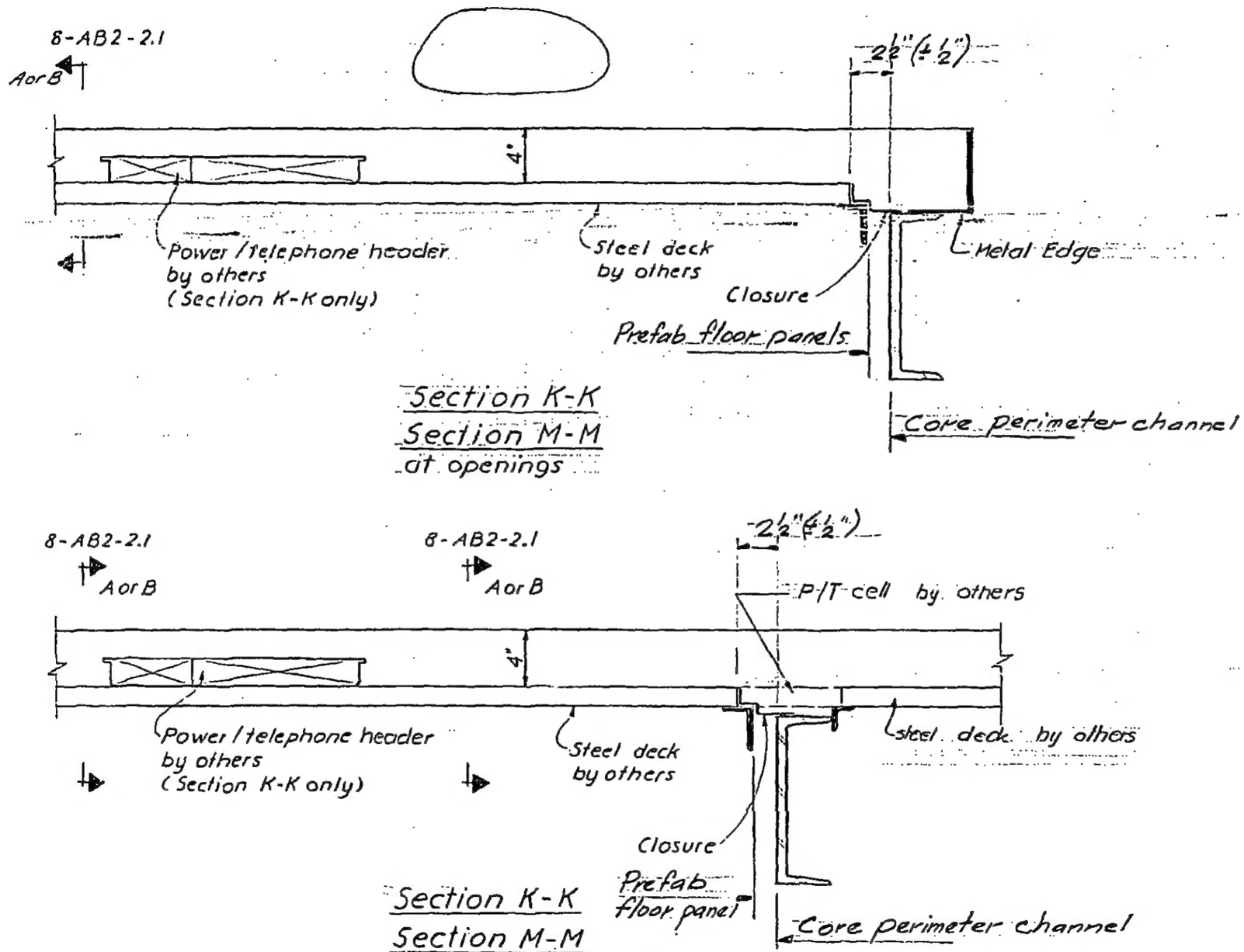
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - 4" SLAB ON STEEL DECK | DATE 3-1-68

REVISIONS

5/31/68

3-12-69



Section K-K
Section M-M
at openings

Section K-K
Section M-M
at power/telephone cell extension into core

Note:
Reinforcing not shown

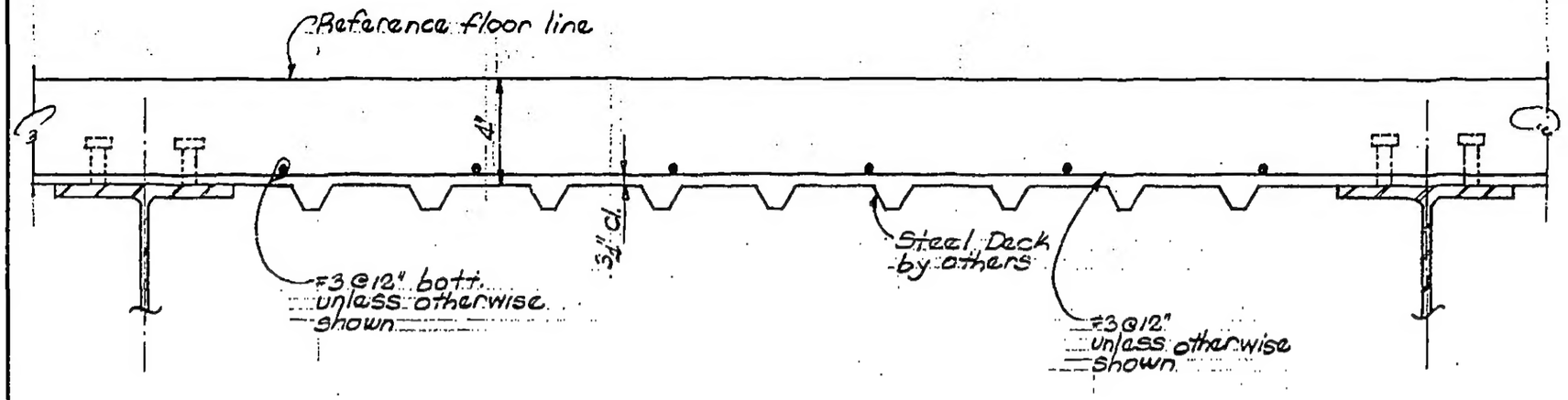
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

8-AB2-2.5

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - 4" SLAB ON STEEL DECK | DATE 3-1-68

REVISIONS



Section N-N

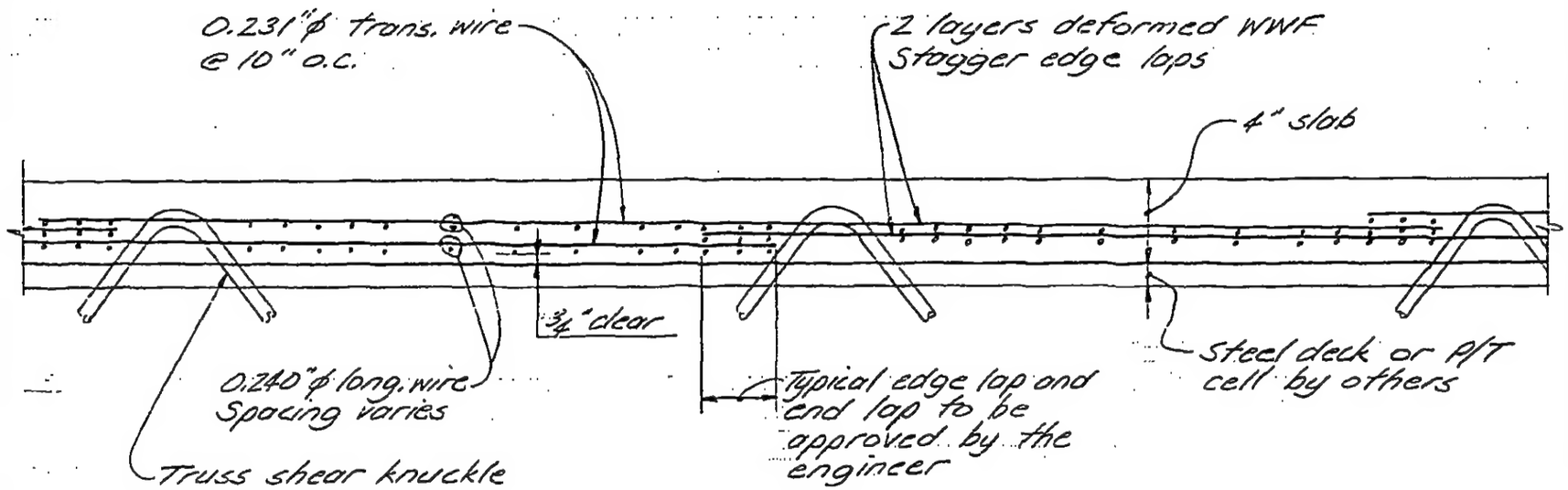
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34960
REGISTERED IN THE STATE OF NEW YORK

8.AB2-2.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS- 4" SLAB ON STEEL DECK | DATE 8-27-69

REVISIONS



Section Q-Q

Typical Section - Floor

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN J.A.

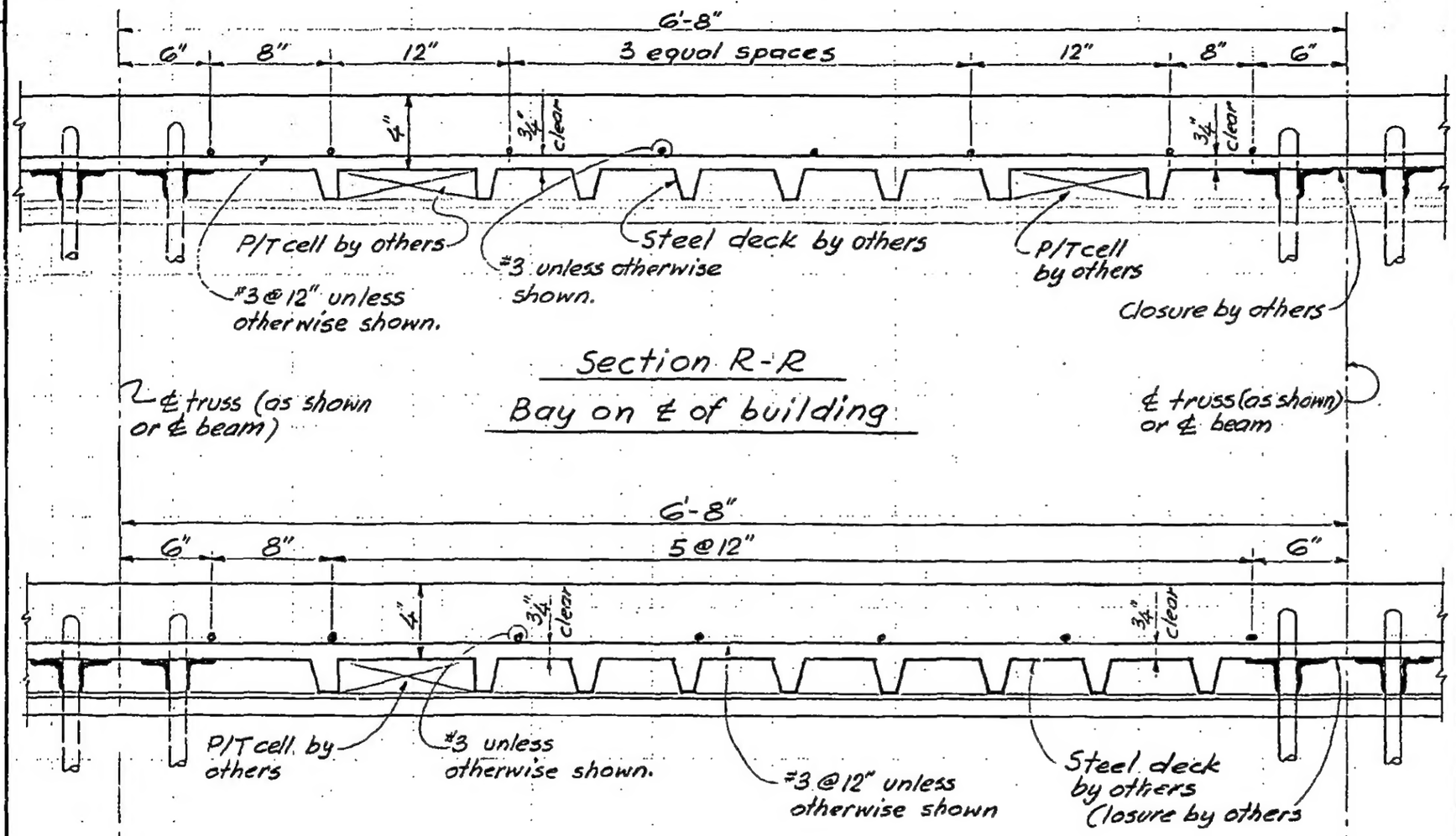
REVISED WaB

8-AB2-2.7

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - 4" SLAB ON STEEL DECK | DATE 10-24-69

REVISIONS

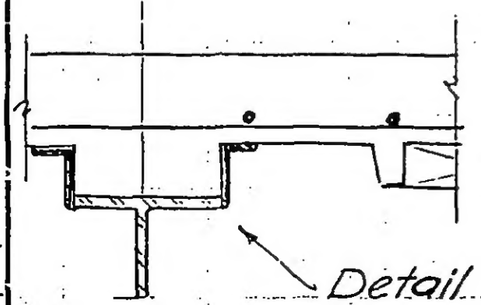


Section R-R

Bay on ℄ of building

Section S-S

Typical Bay



Detail where beam is (-6)

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN

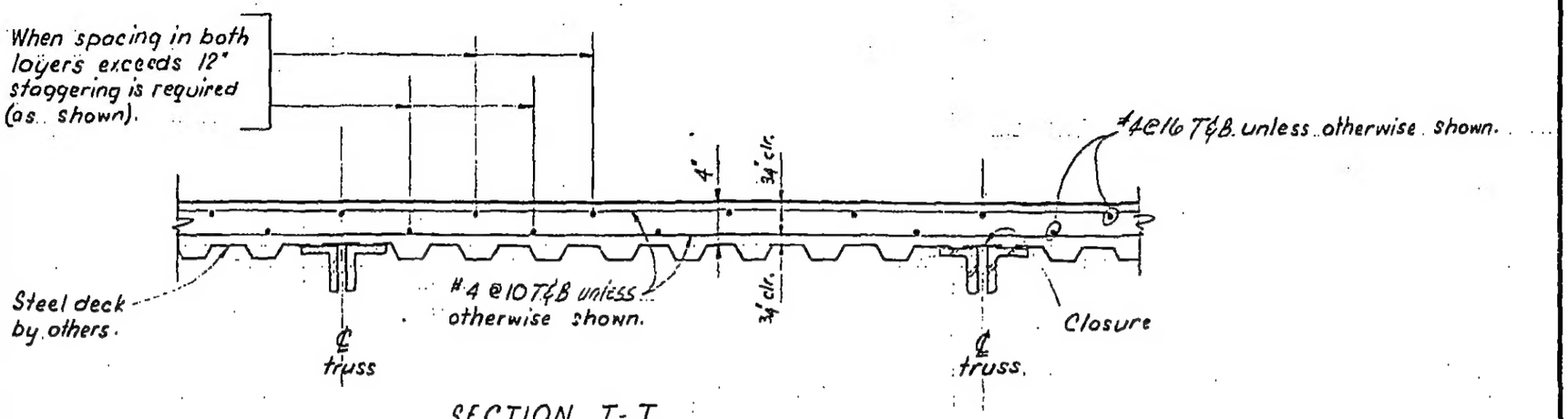
REVIEWED

8-A82-2.8

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS - 4" SLAB ON STEEL DECK. | DATE: 3-19-70

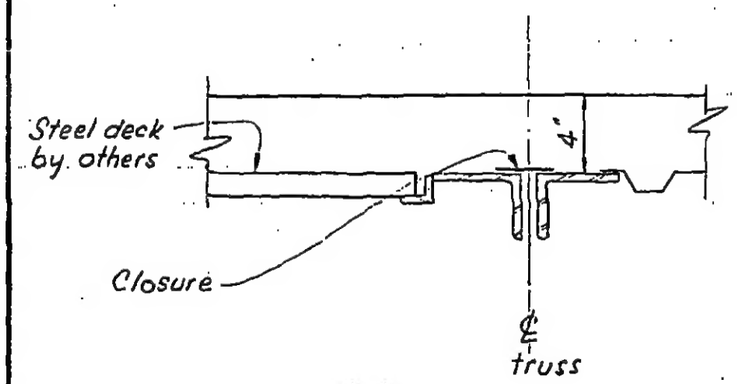
REVISIONS



SECTION T-T

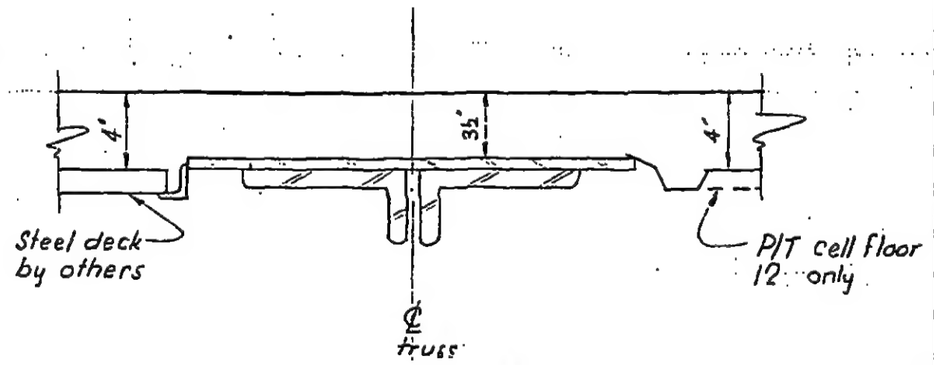
Typical Bay

Notes: 1. For sequence of bar placement see plans.
2. P/T cells (by others) may occur in deck construction floor 12 only. See plans.



SECTION U-U

Note: Reinf. not shown



SECTION U1-U1

Note: Reinf. not shown.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

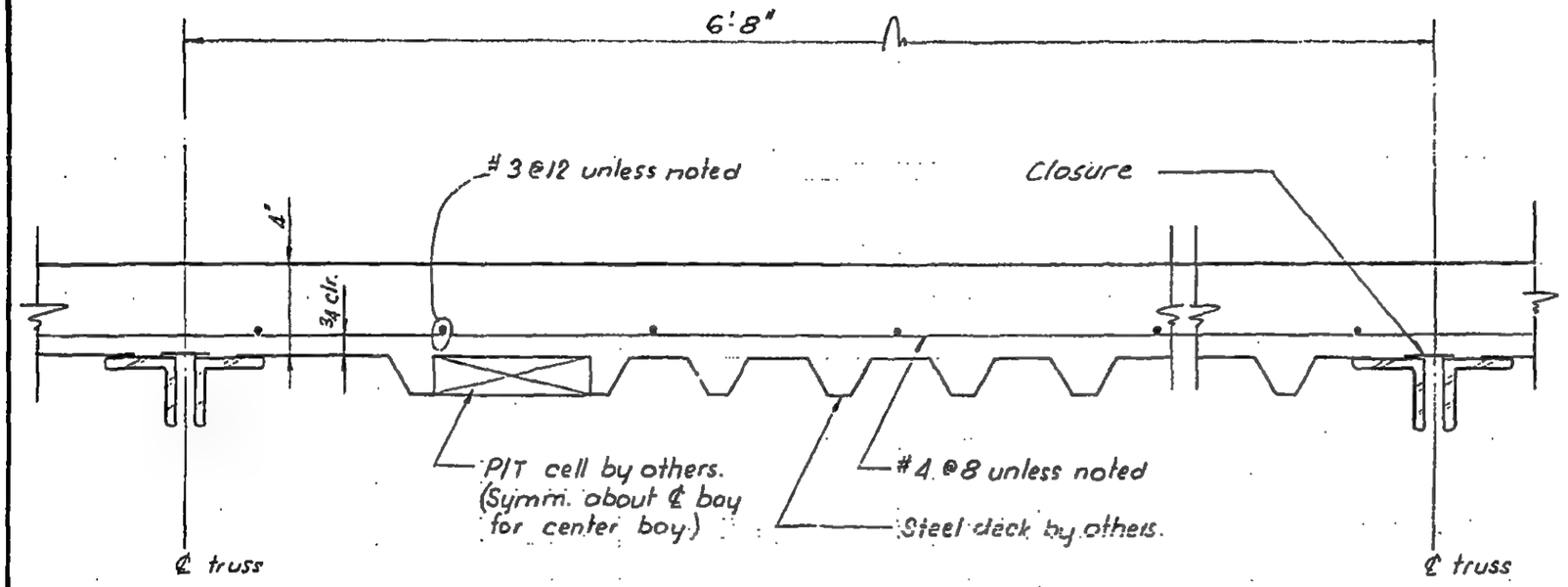
DESIGNED: T. O'Neill
DRAWN: T. Terrelonge
REVIEWED:

8-AB2-2.9

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS - 4' SLAB ON STEEL DECK | DATE: 3-19-70

REVISIONS



SECTION V - V
TYPICAL BAY

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

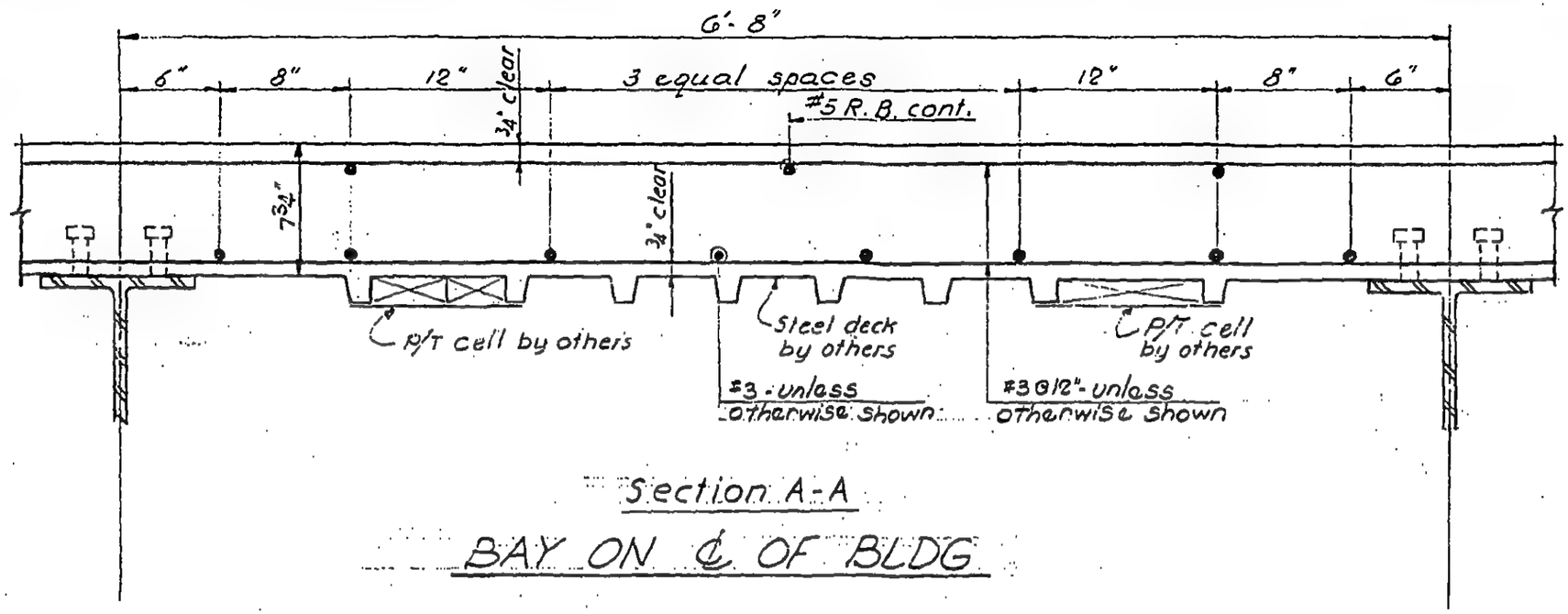
DESIGNED: T O'Neill
DRAWN: T. Terrelonge.
REVIEWED:

8-AB2-2.10

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

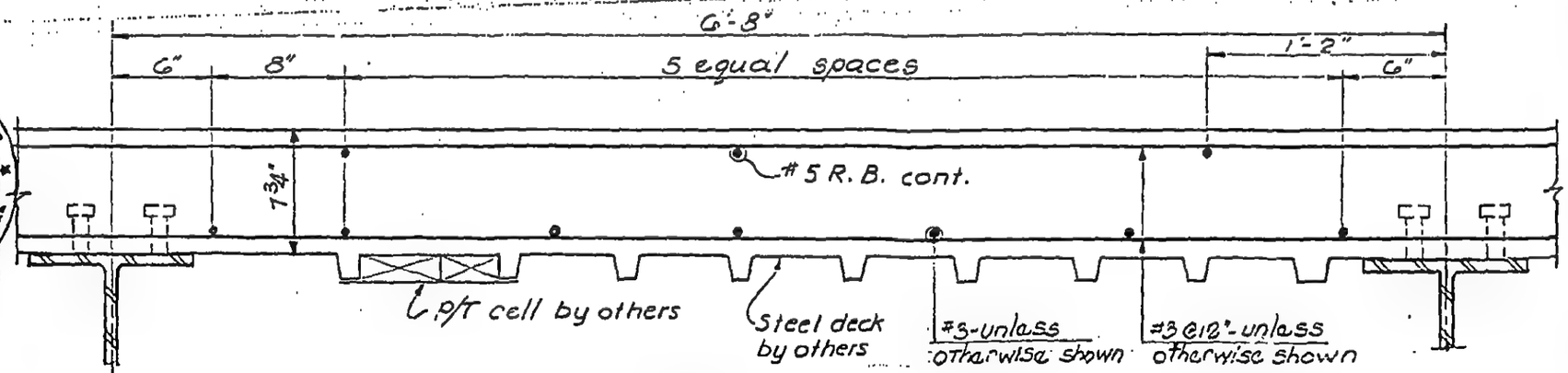
PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTION - SLAB 5" OR MORE ON STEEL DECK | DATE 3-1-68 J.L.M.

REVISIONS



Section A-A

BAY ON ℄ OF BLDG



Section B-B

TYPICAL BAY

LESLIE E. ROBERTSON REGISTERED PROFESSIONAL ENGINEER No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

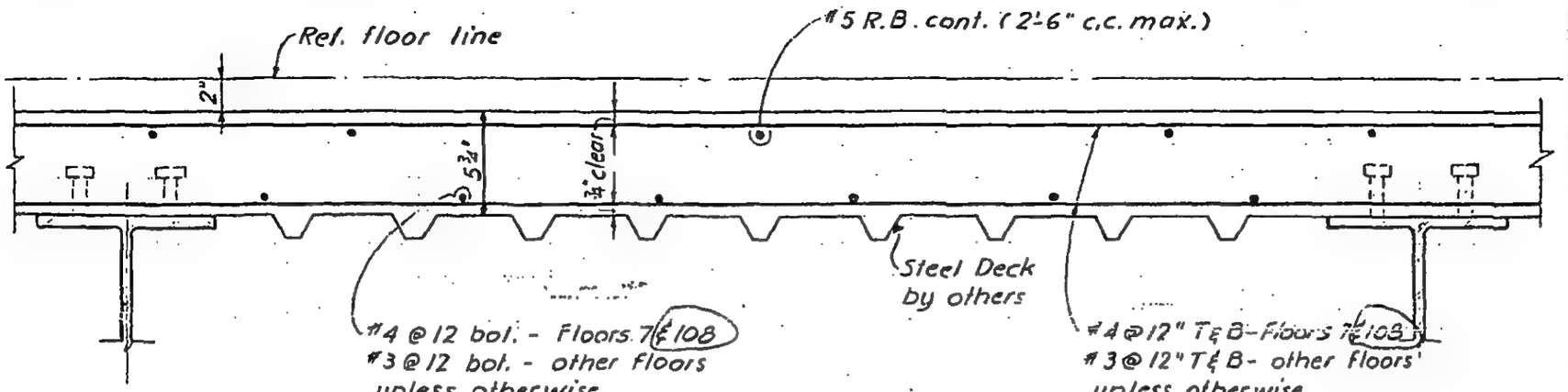
8-AB2-31

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON. Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - SLAB 5" OR MORE ON STEEL DECK | DATE 3-1-68

REVISIONS

12-1-70



Section C-C

TYPICAL BAY

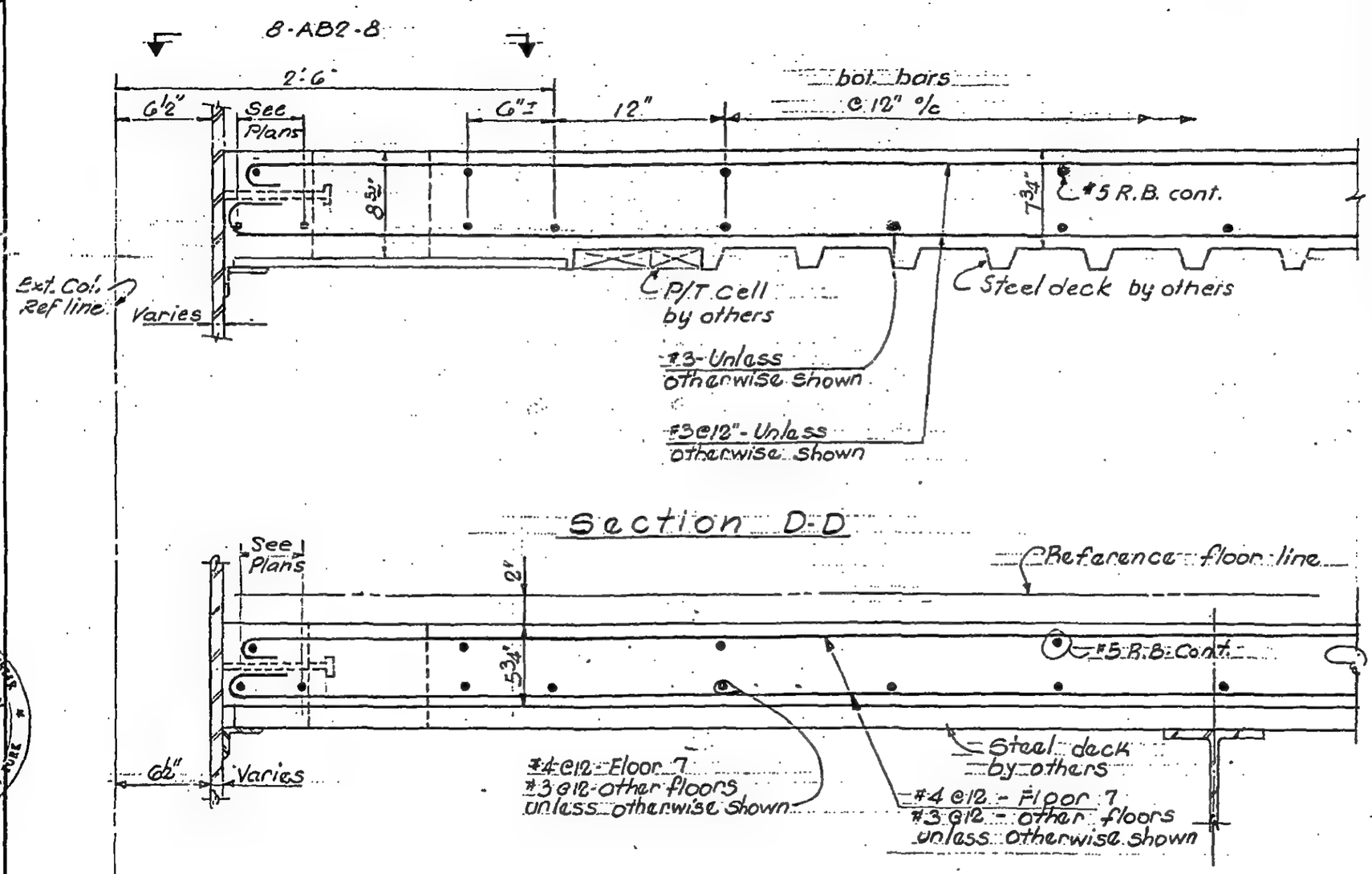
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

8-AB2-3.2

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTION - SLAB 5" OR MORE ON STEEL DECK | DATE 3-1-68

REVISIONS



Section D-D

Section E-E
END BAY

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 STATE OF NEW YORK

8-AB2-3.5

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

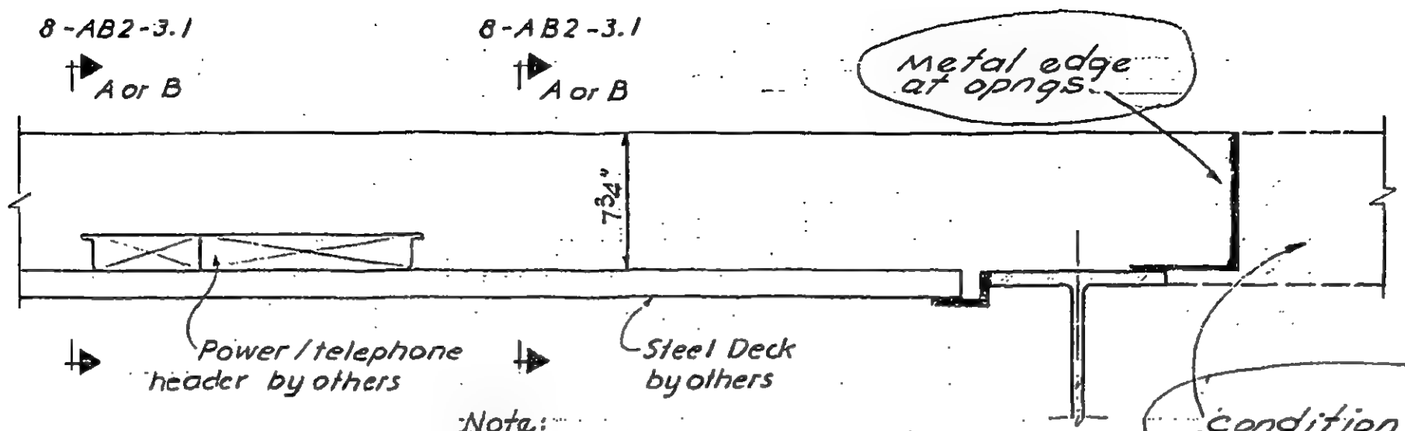
PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - 5" OR MORE - SLAB ON STEEL DECK | DATE 3-1-68

REVISIONS

5/31/68

8-AB2-3.1 ▶ A or B

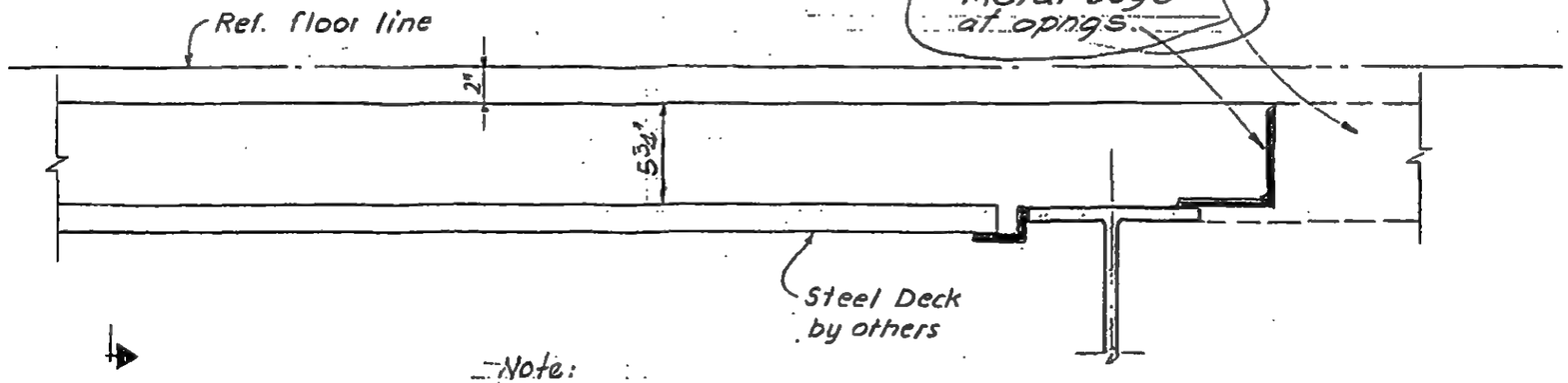
8-AB2-3.1 ▶ A or B



Note:
See 8-AB2-3.1 & 8-AB2-7 for reinforcing.

Section F-F

8-AB2-3.2 ▶ C



Note:
See 8-AB2-3.2 for reinforcing

Section 6-6

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
STATE OF NEW YORK

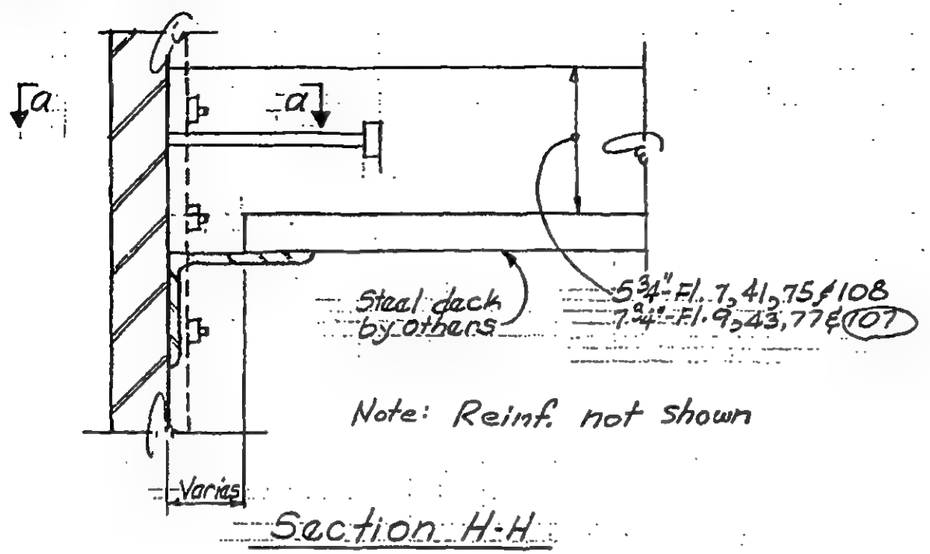
8-AB2-3.4

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS - SLAB 5" OR MORE ON STEEL DECK | DATE 3-1-68

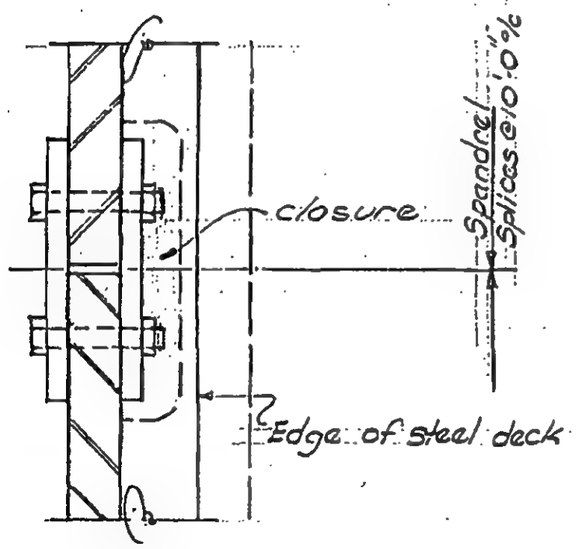
REVISIONS

5/31/68
12-1-70



Note: Reinf. not shown

Section H-H



Plan Section a-a

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
LICENSED BY THE STATE OF NEW YORK

11

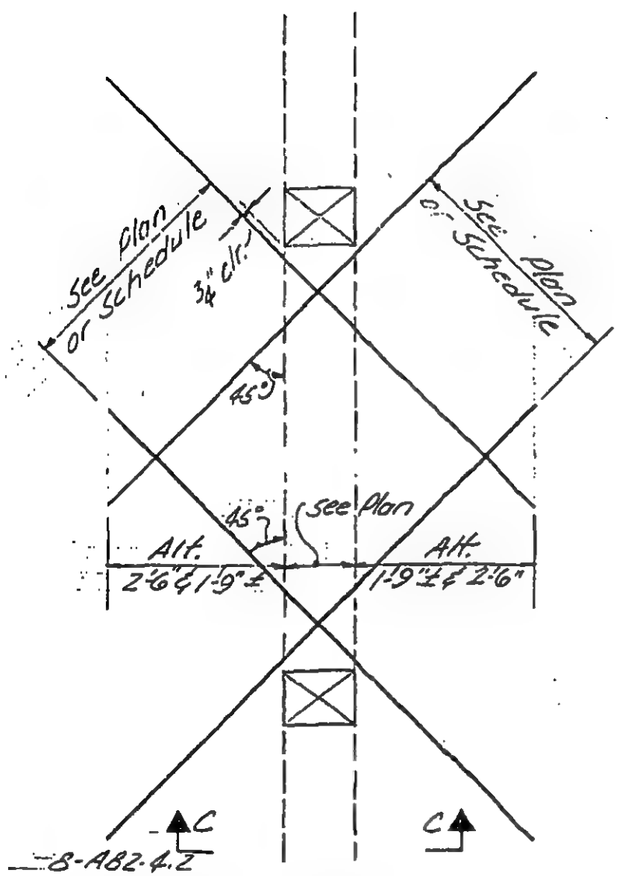
8-A82-3.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

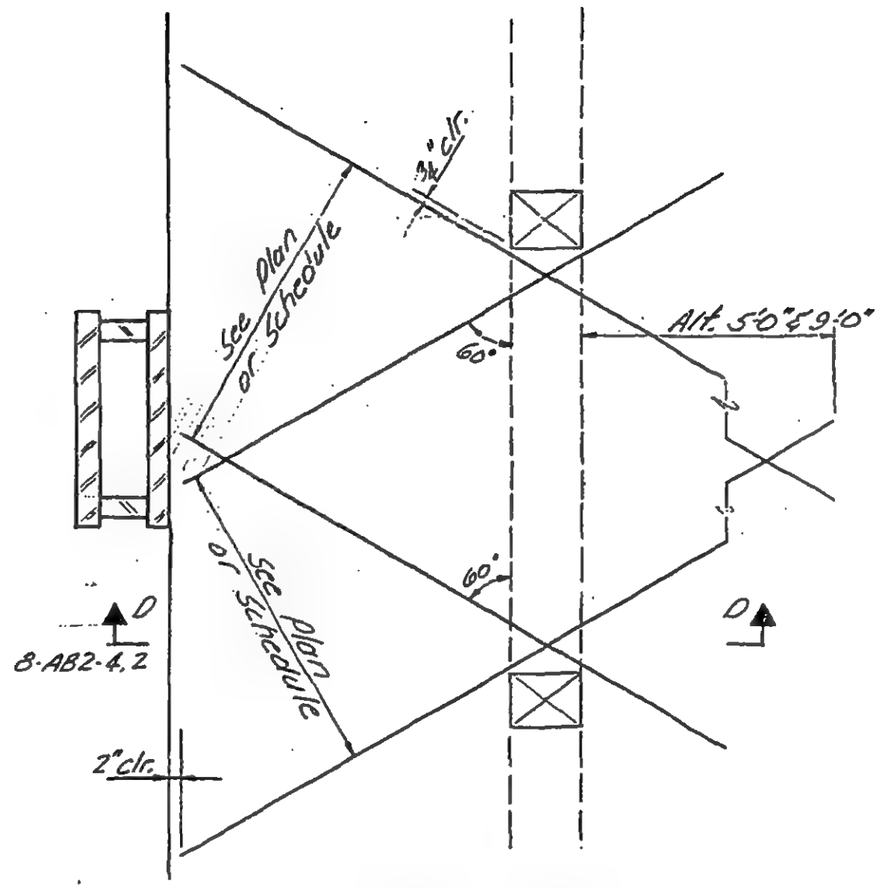
PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL DETAILS OF 2" HEADER IN 4" SLAB | DATE: 3-1-68

REVISIONS

General Rev. 3-12-69



Detail Plan A
Typical for bars at 45° to header



Detail Plan B
Typical for bars at 60° to header

NOTE:
Any bars cut short because of 3" headers or other obstructions shall be hooked.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN J. Adams

REVIEWED

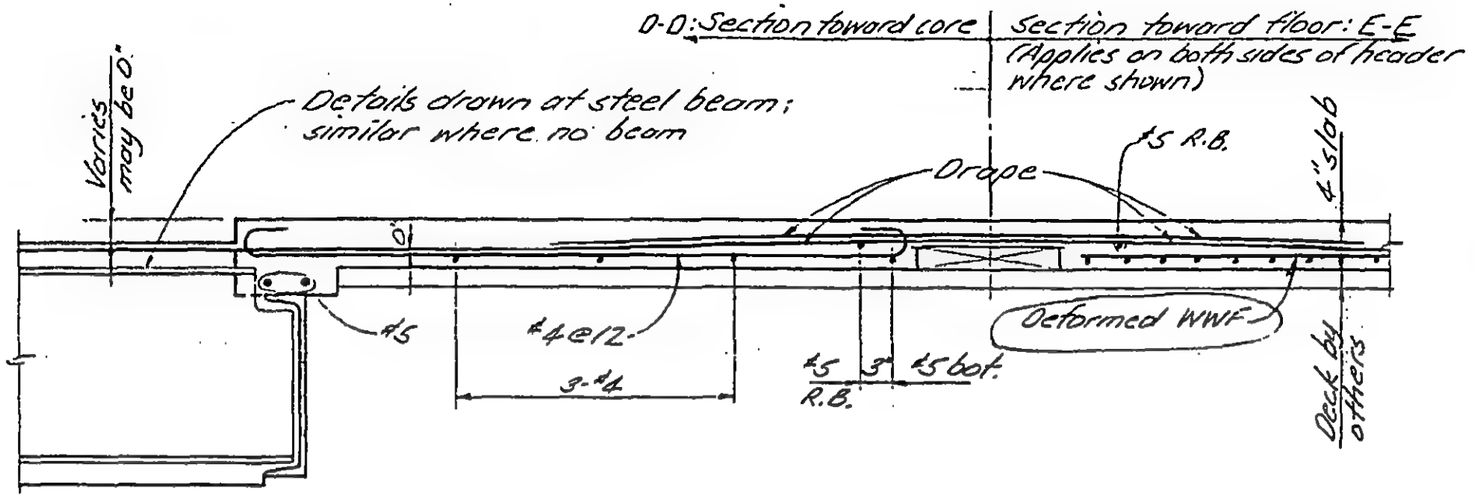
8-AB2-4.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

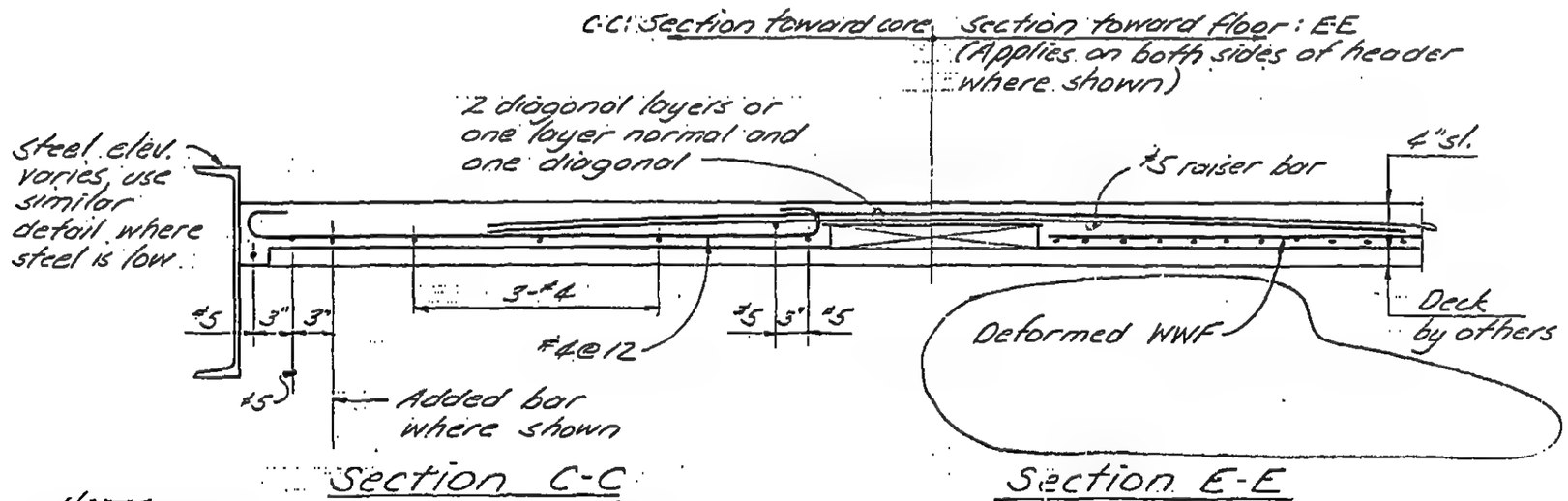
PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL DETAILS OF 2" HEADER IN 4" SLAB | DATE: 3-12-69

REVISIONS

8-27-69



Section D-D Section E-E



Section C-C Section E-E

NOTE
For additional reinf. or other modifications see Plans; see Note 5 on 8-AB1-2.3.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN J Adams

REVIEWED CWCB

8-AB2-4.2

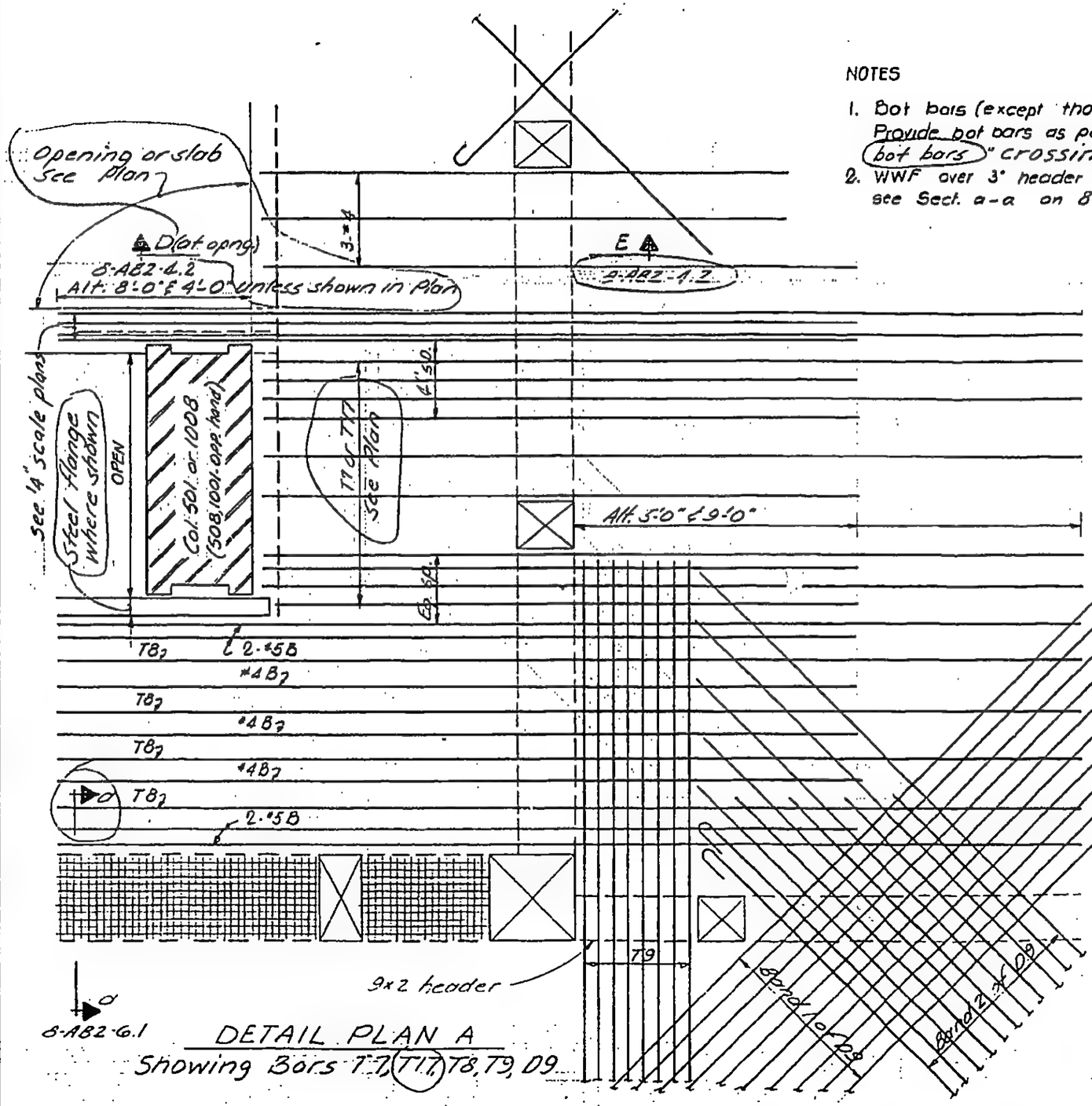
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: DETAILS OF BARS ACROSS HEADERS | DATE: 3-1-68

REVISIONS

General Rev. 3-12-69

8-27-69



NOTES

1. Bot bars (except those marked "B") not shown. Provide bot bars as per Sections. Drape bot bars" crossing headers.
2. WWF over 3" header shown thus ##. For width see Sect. a-a on 8-AB2-6.1.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN: G.T. Hellebranth

REVIEWED: WAB

8-AB2-5.1

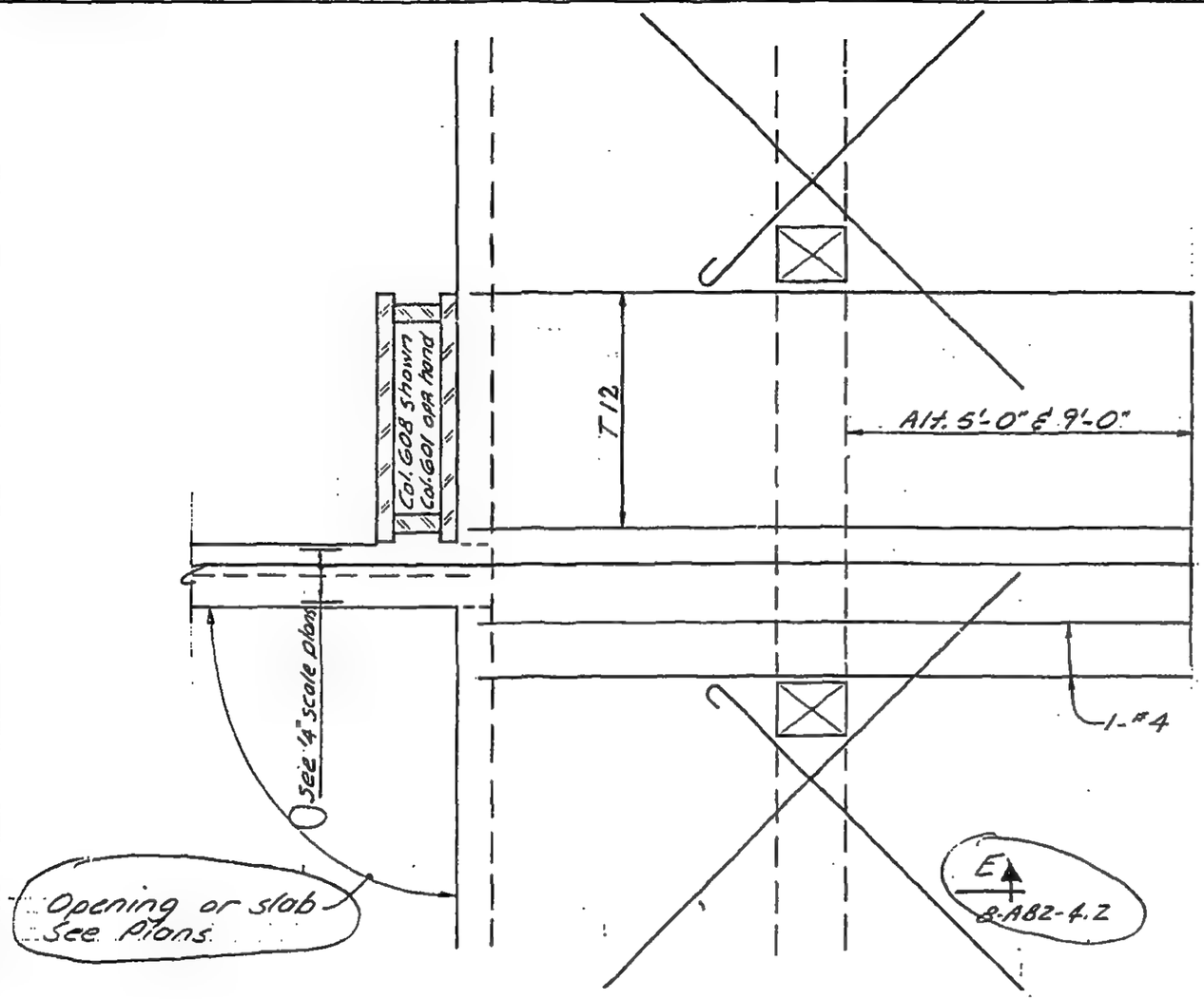
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE DETAILS OF BARS ACROSS HEADERS | DATE 3-12-69

REVISIONS

8-27-69

For notes see 8-AB2-5.1



DETAIL PLAN B
Showing Bars T 12

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN A.L.F.

REVIEWED LER

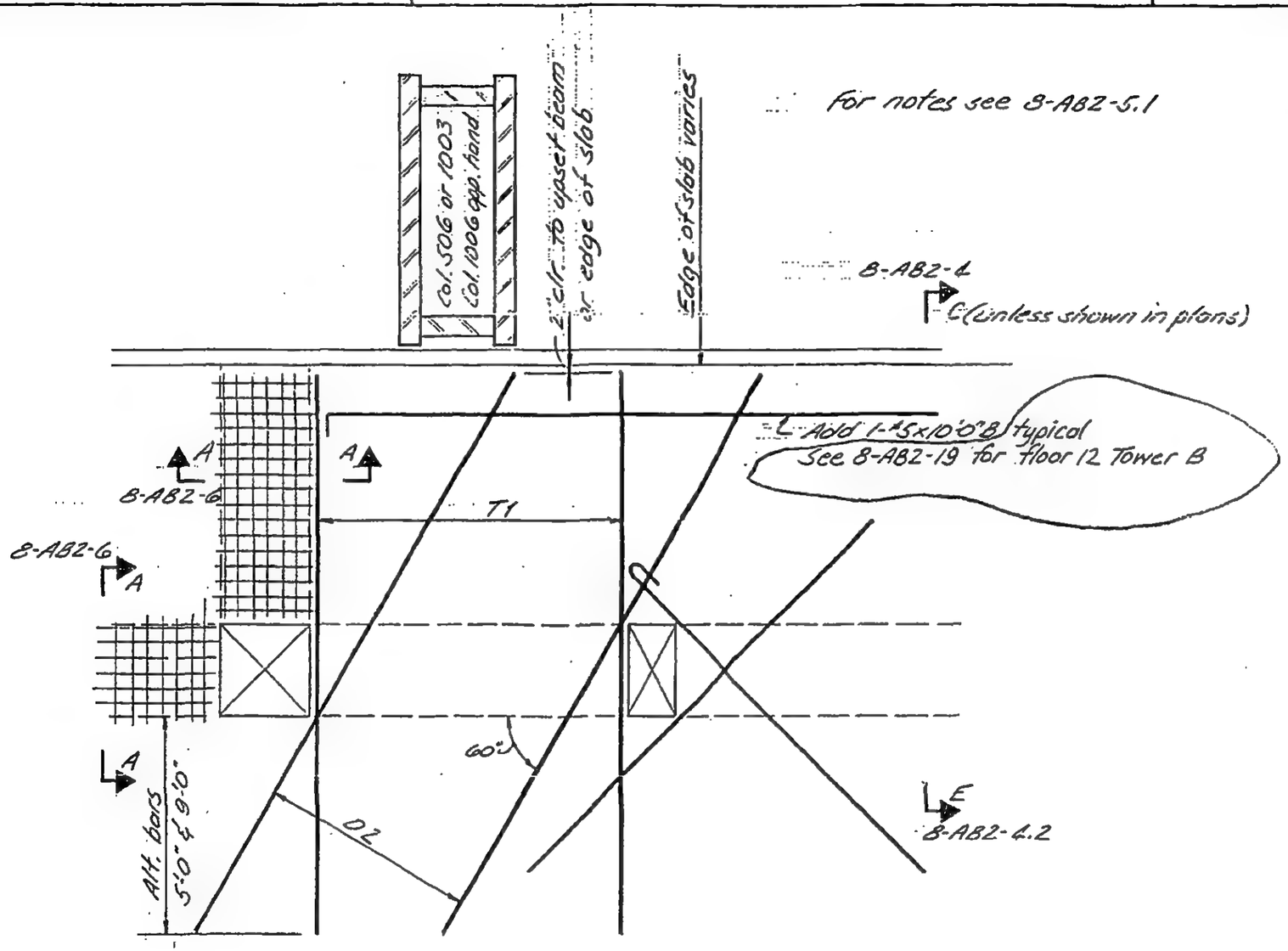
8-AB2-5.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE DETAILS OF BARS ACROSS HEADERS | DATE 3-12-69

REVISIONS

8-27-69
3-19-70



DETAIL PLAN C
Showing bars T1, O2

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN
J. Adams

REVIEWED
W-AB

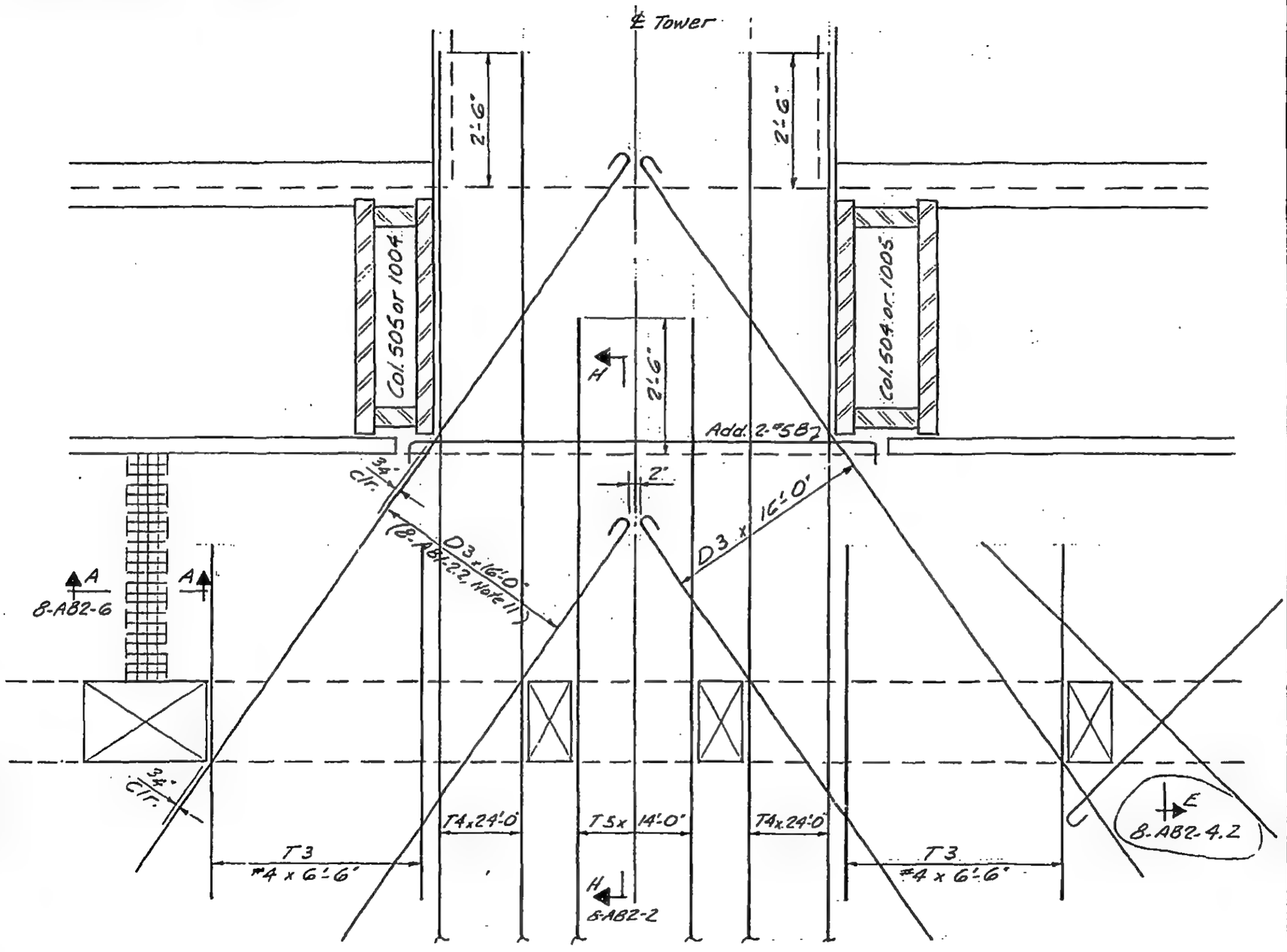
8-AB2-5.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: DETAILS OF BARS ACROSS HEADERS | DATE: 3-12-69

REVISIONS

8-27-69



DETAIL PLAN D

Showing Bars T3, T4, T5, D3

For notes see 8-AB2-5.1

8-AB2-5.4

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN A.L.F.

REVIEWED

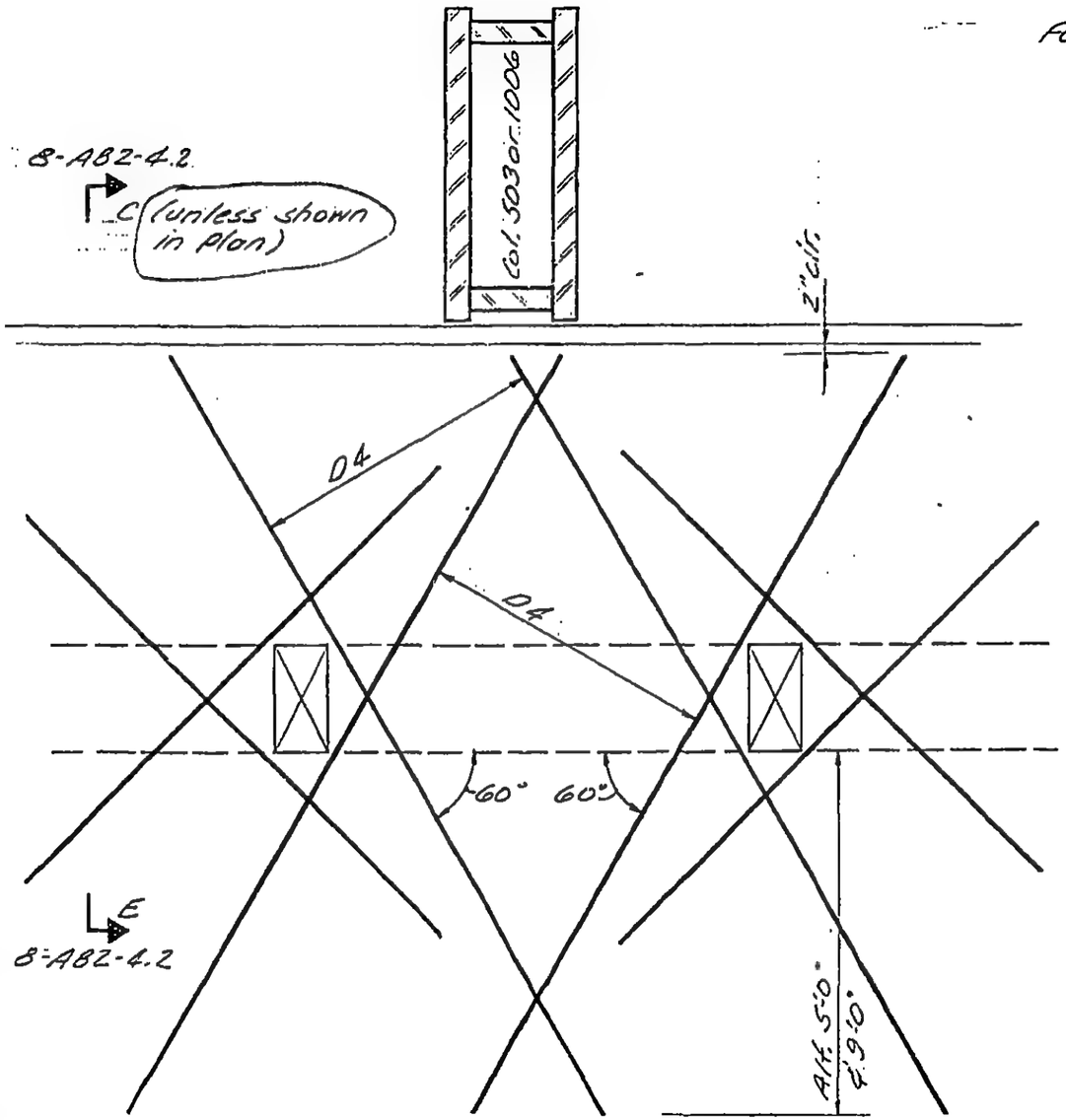
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE DETAIL OF BARS ACROSS HEADERS | DATE 3-12-69

REVISIONS

8-27-69

For notes see 8-AB2-5.1



DETAIL PLAN E

Showing bars 04

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN J. Adams

REVIEWED

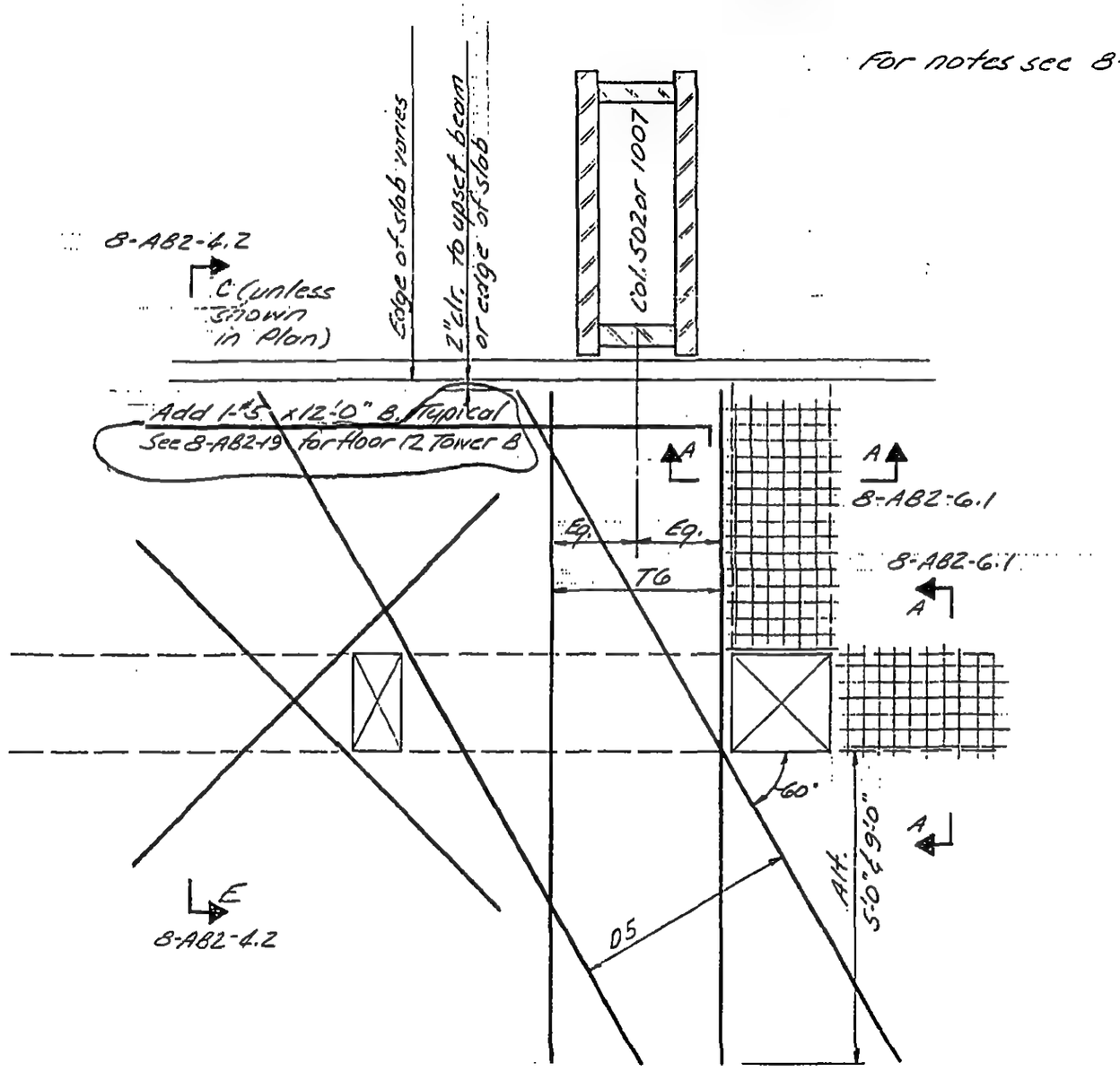
8-AB2-5.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: DETAILS OF BARS ACROSS HEADERS | DATE: 3-12-69

REVISIONS
8-27-69
3-19-70

For notes see B-AB2-5.1



DETAIL PLAN F
Showing bars T6, D5

DESIGNED
DRAWN J. Adams
REVIEWED W. AB

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34960 — UNIVERSITY OF THE STATE OF NEW YORK

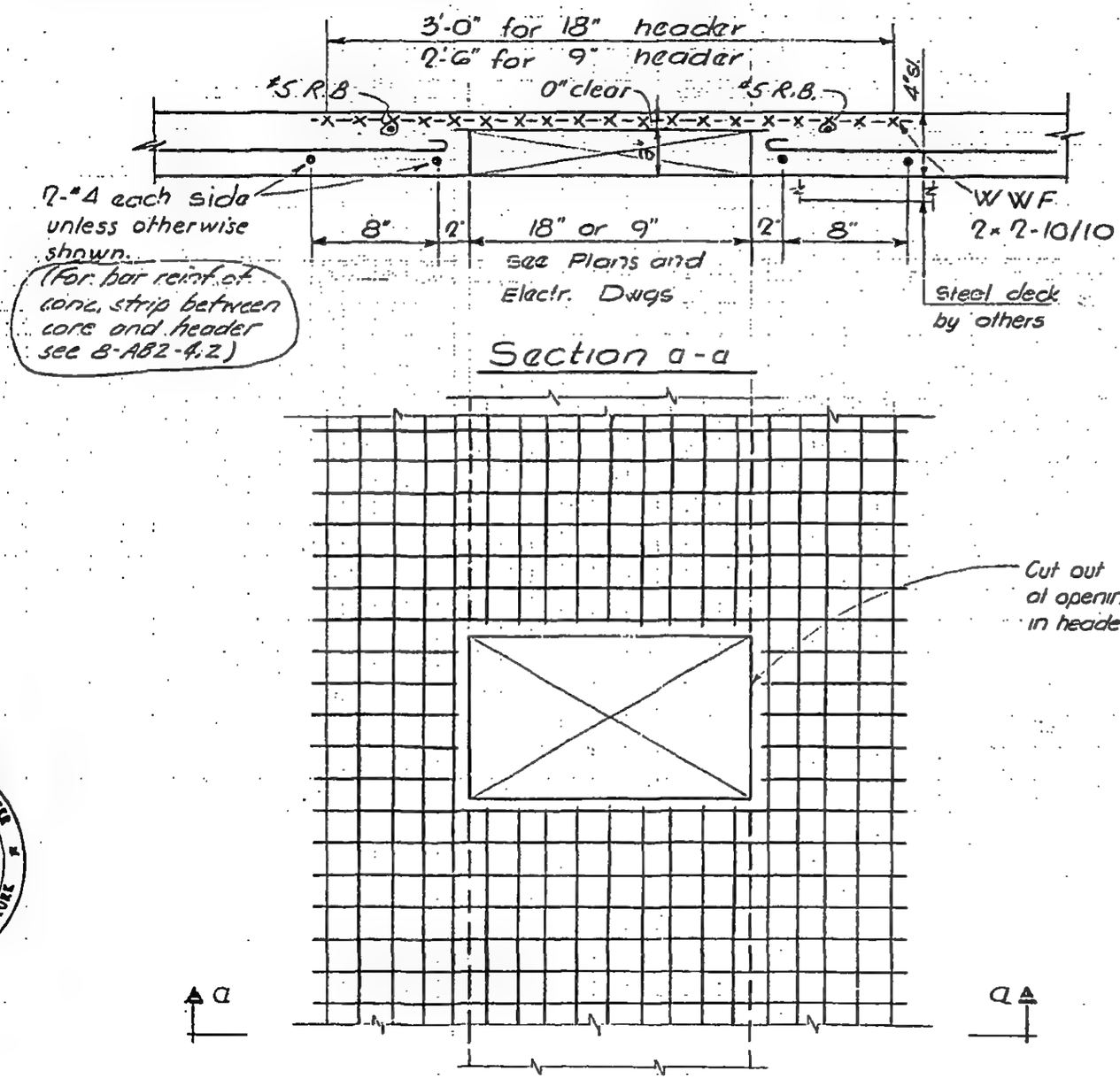
B-AB2-5.6

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Enginoors

PROJECT THE TRADE WORLD CENTER | TITLE TYPICAL DETAIL OF 3" HEADER IN 4" SLAB | DATE 3-1-68

REVISIONS

3-12-69



Detail A - Plan

Showing WWF over Header

S-AB2-G.1

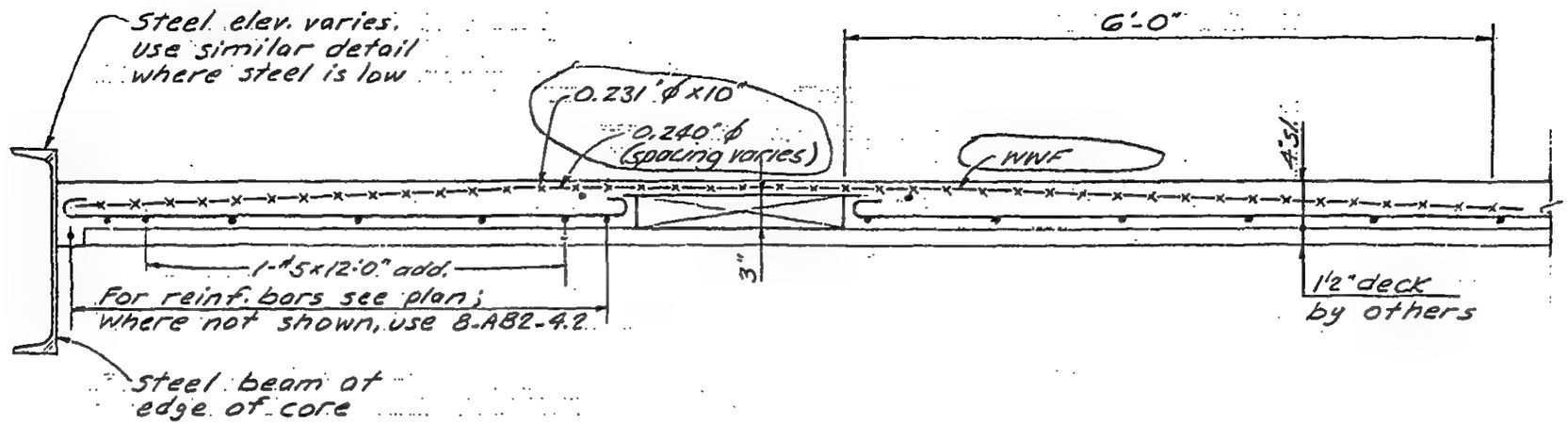
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL DETAIL OF 3" HEADER IN 4" SLAB | DATE: 5-12-69

REVISIONS

8-27-69



Section B-B

Same as Det. A on 8-AB2-6.1 except as shown

Notes

1. Lap deformed WWF with 2x2-10/10 WWF in adjacent bay 4" min. between end wires. Laps over header not permitted.
2. Use this section only where shown in plan. Elsewhere, use Det. A on 8-AB2-6.1.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN A.L.F.

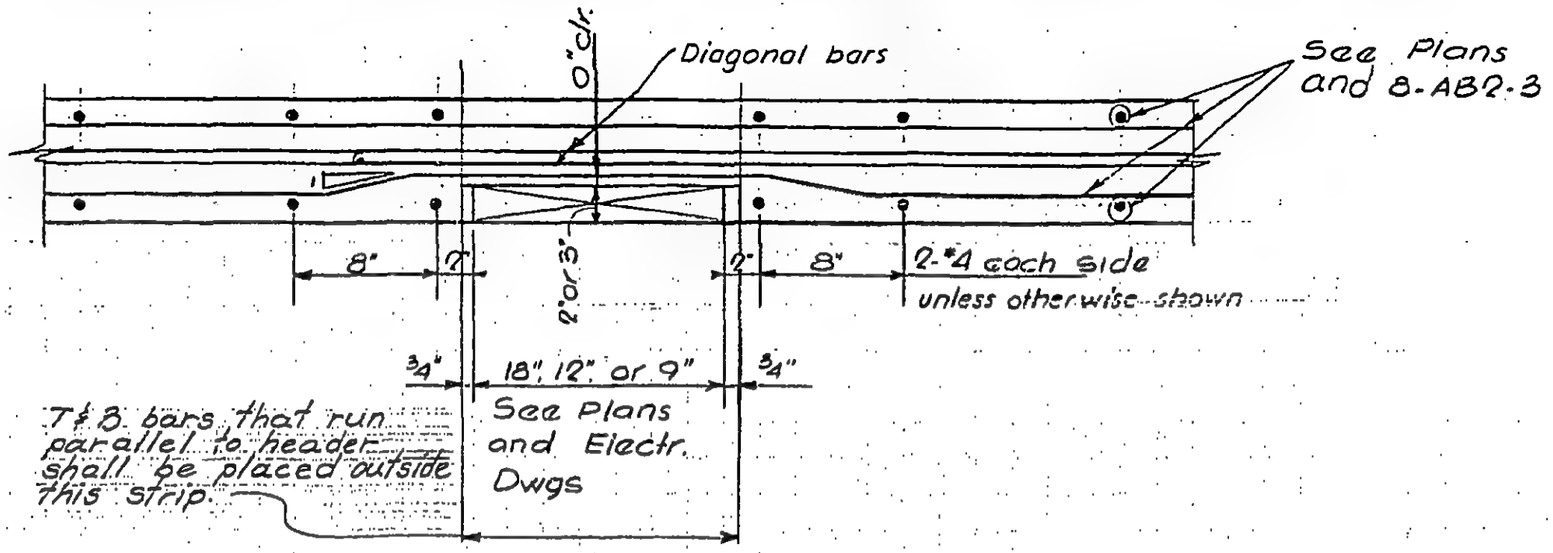
REVIEWED W.N.B.

8-AB2-6.2

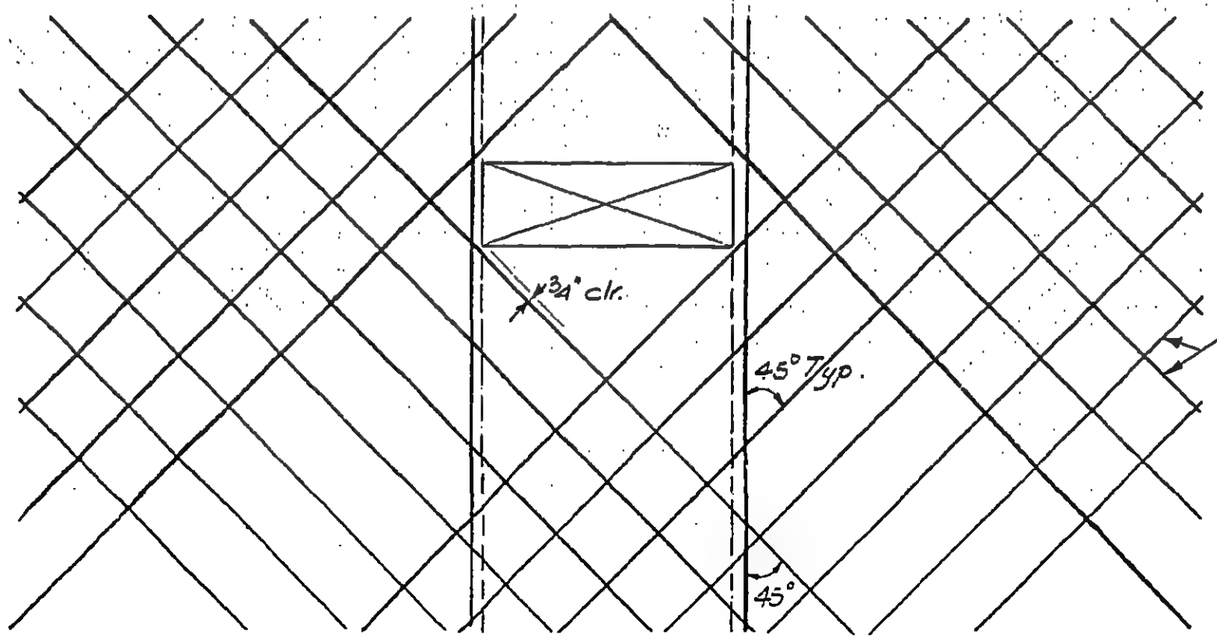
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE DETAIL OF HEADER IN 7¾" SLAB | DATE 3-1-68

REVISIONS



Section a-a



Plan

Showing Diagonal "D" Bars

8-AB2-7

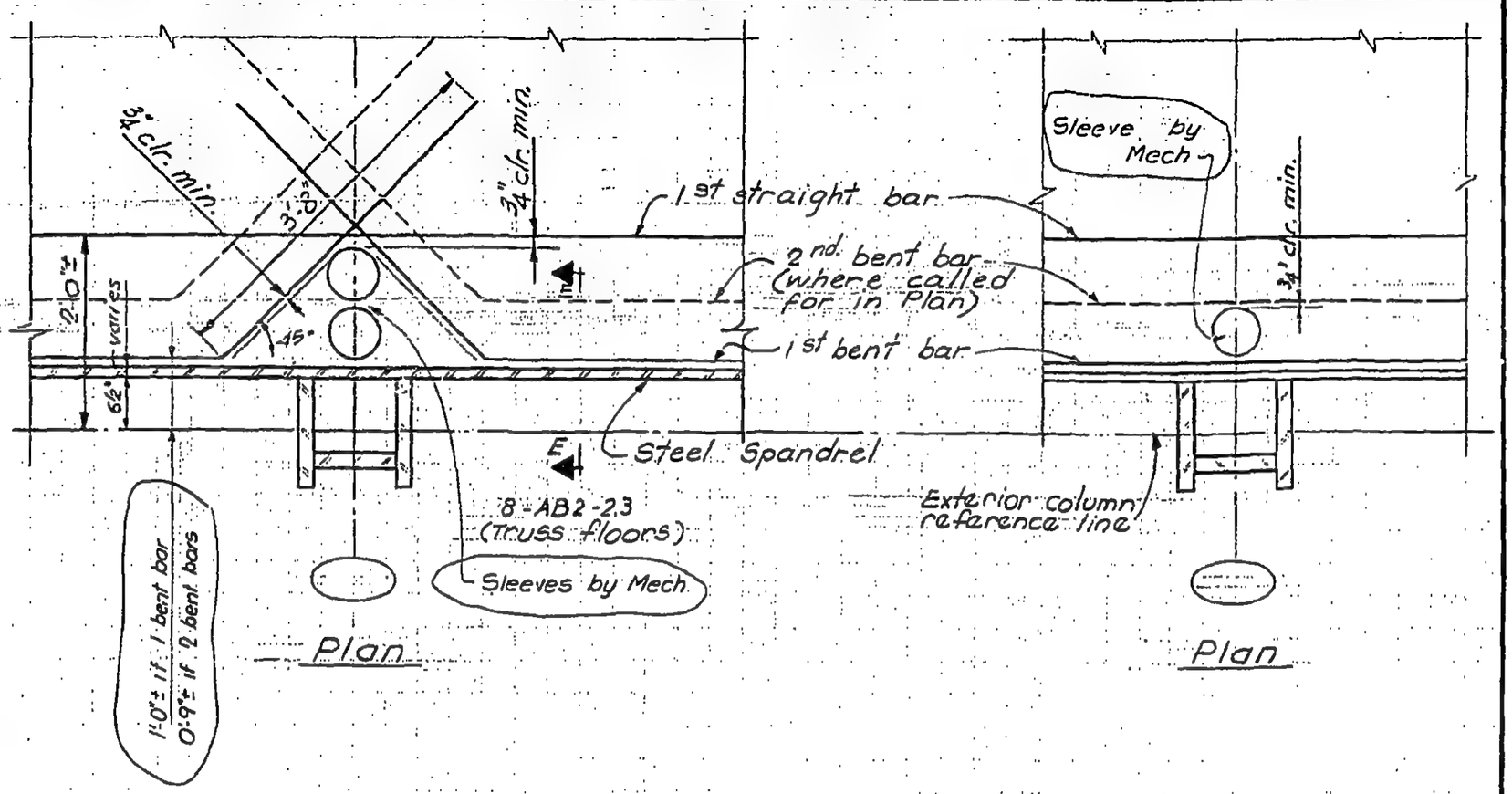
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
STATE OF NEW YORK

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE DETAIL AT SLEEVES NEAR EXTERIOR WALL | DATE 3-1-68

REVISIONS

1-28-69



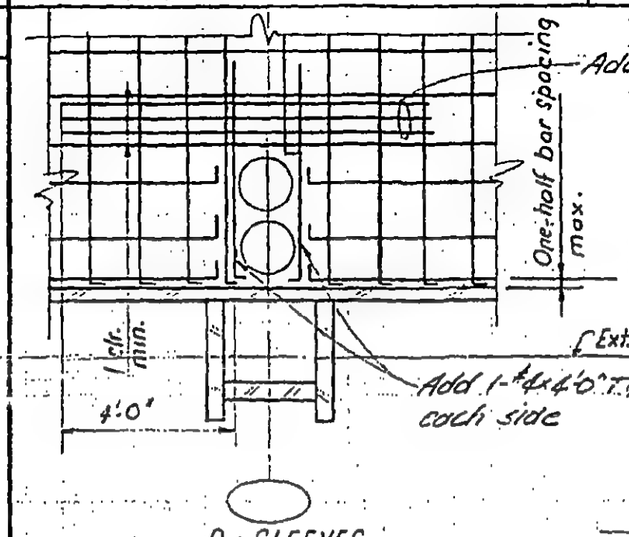
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 84360
UNIVERSITY OF THE STATE OF NEW YORK

8-AB2-8.1

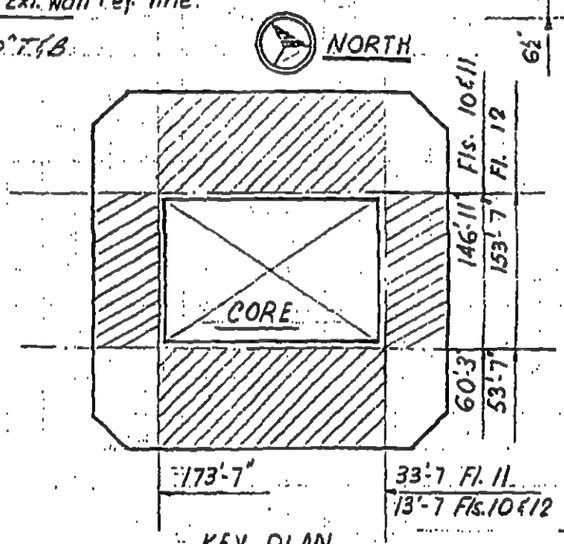
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER. | TITLE: TYPICAL DETAILS AT SLEEVES NEAR EXTERIOR WALL. | DATE: 3-19-70

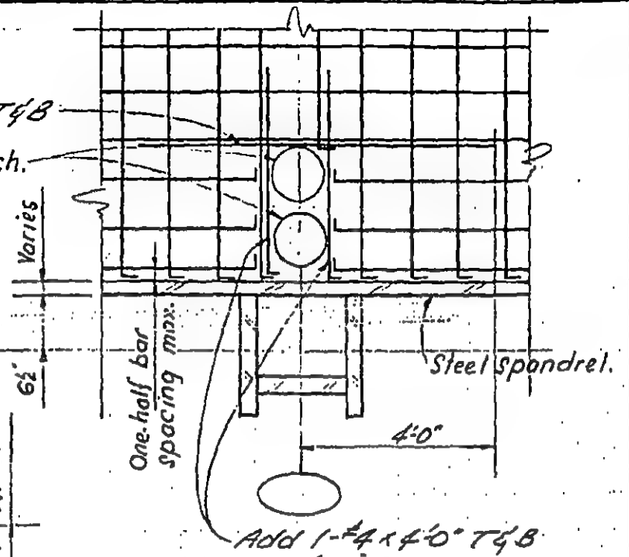
REVISIONS



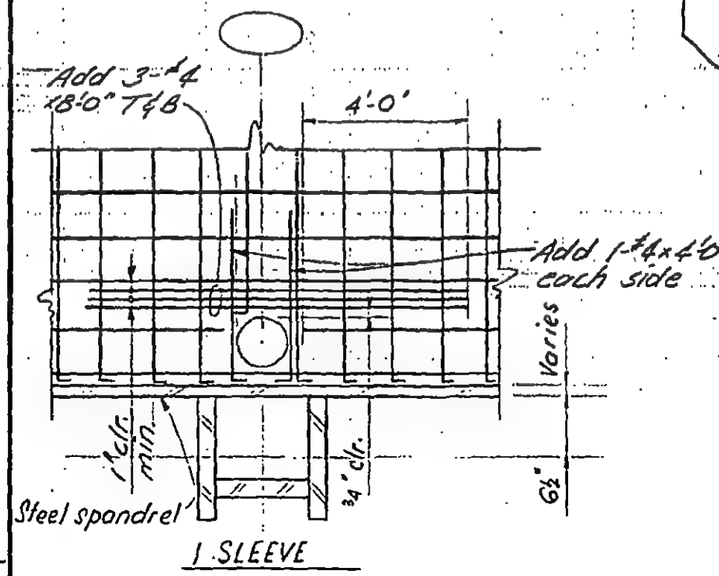
2 SLEEVES.



KEY PLAN

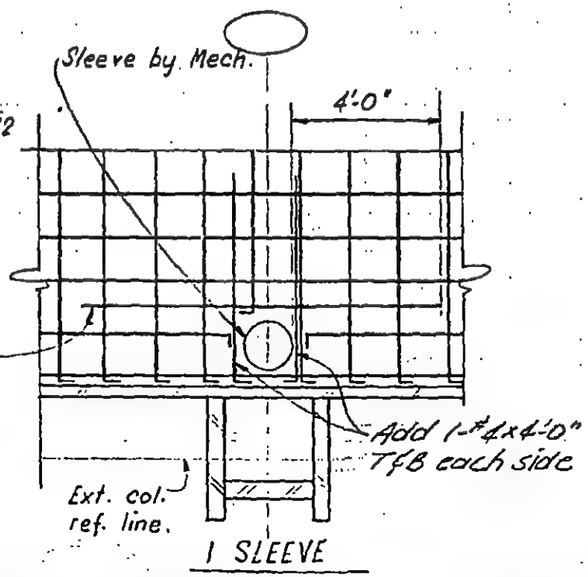


2 SLEEVES



1 SLEEVE

AREA SHOWN SHADED IN KEY PLAN



1 SLEEVE

AREA NOT SHADED IN KEY PLAN

Note; Hook all bars interrupted at sleeves.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34380 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T O'Neill
DRAWN: T. Terrelonge
REVIEWED:

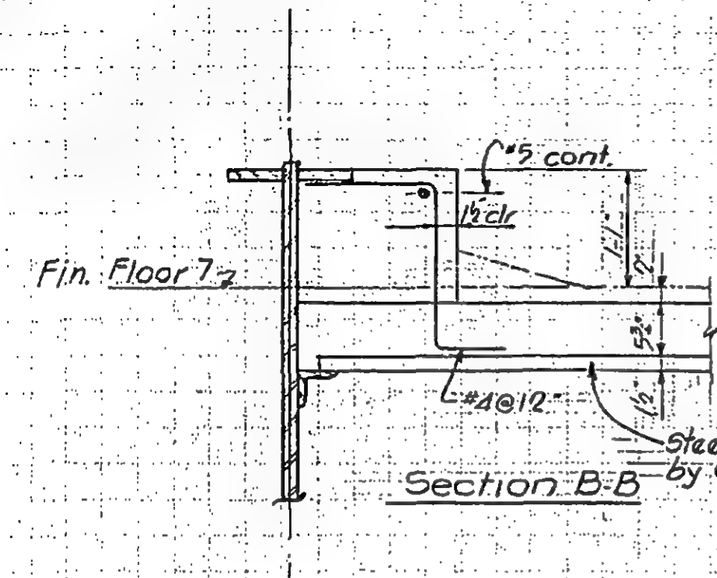
8-AB2-8.2

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

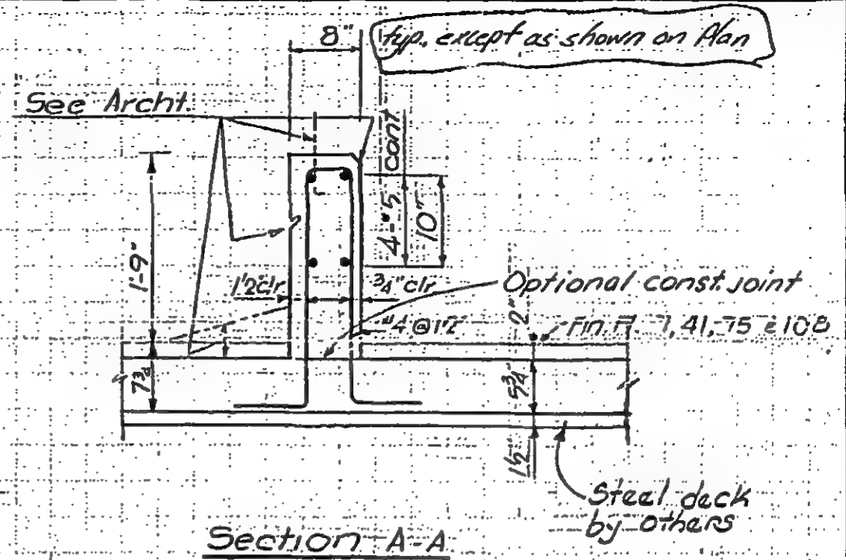
PROJECT THE WORLD TRADE CENTER | TITLE EXTERIOR SILLS, CURBS AND PARAPETS | DATE 3-1-68

REVISIONS

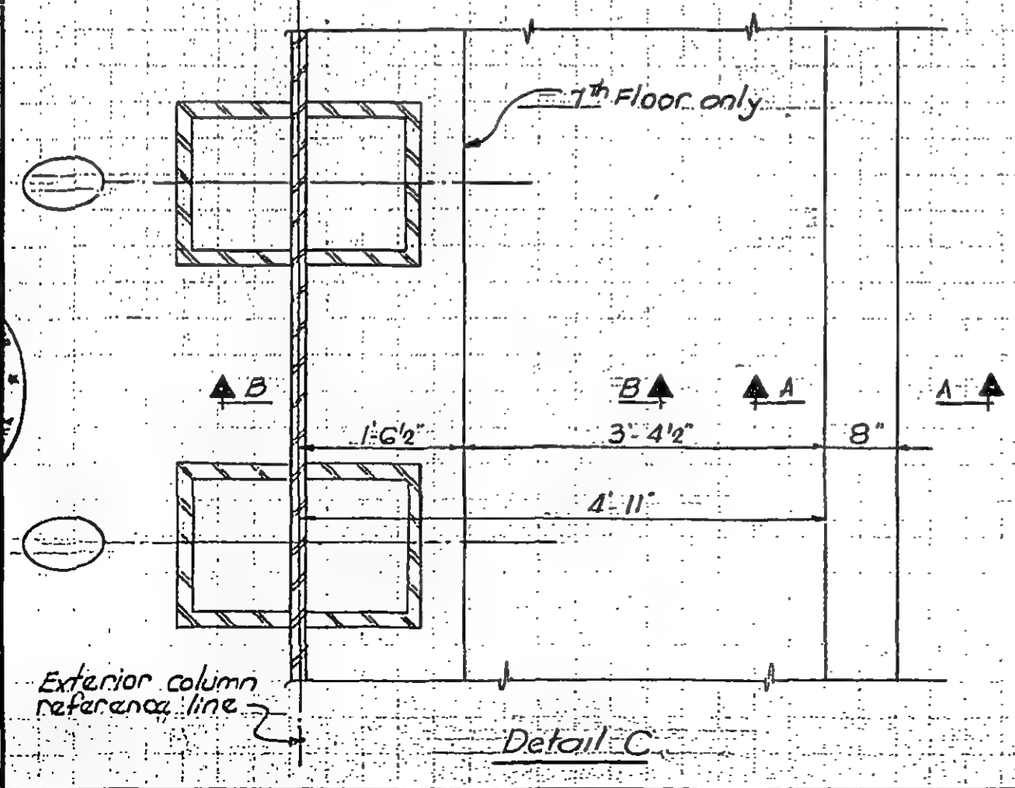
1-28-69
12-1-70
12-1-71



Section B-B



Section A-A



Detail C

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

8-AB2-10.1

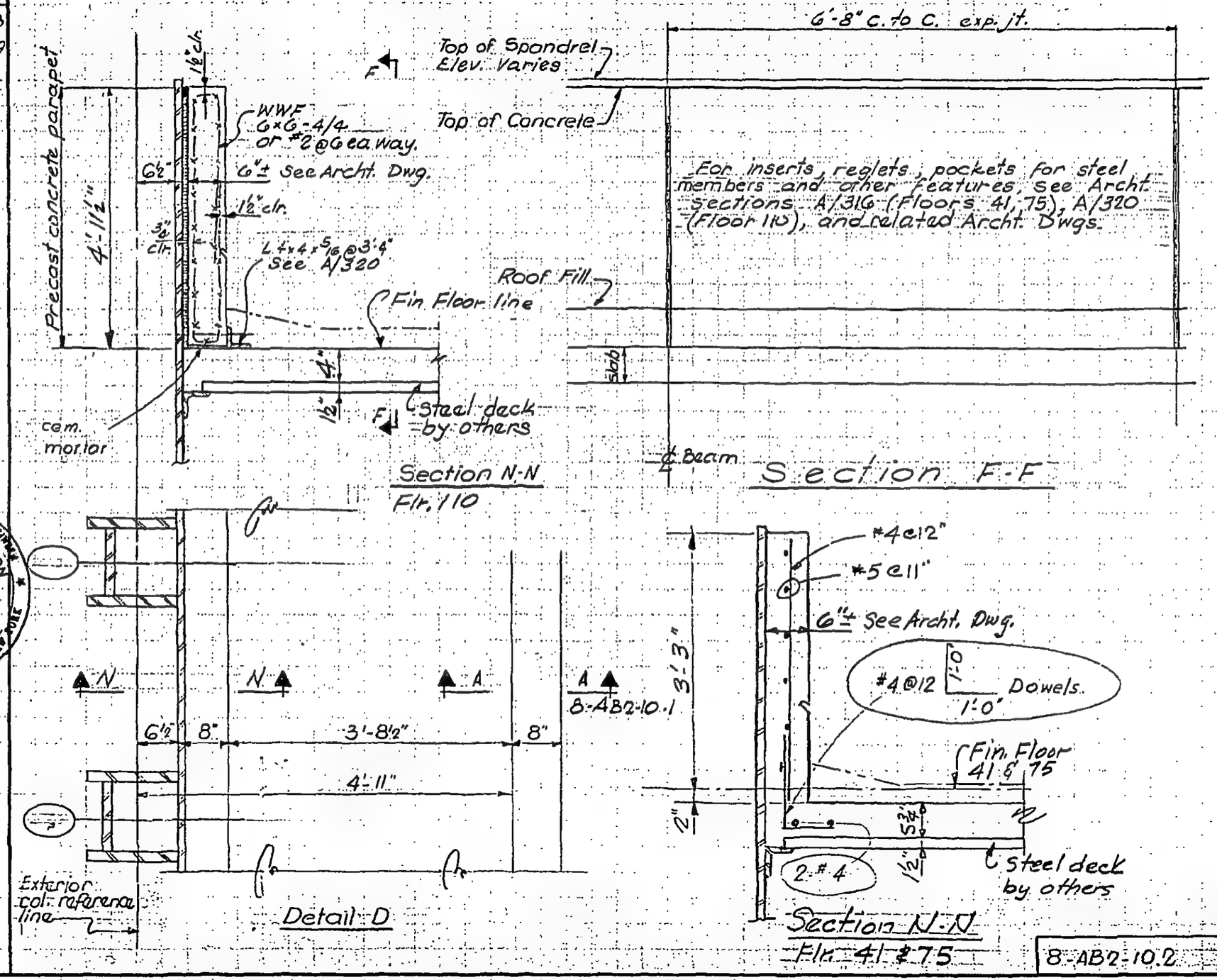
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE EXTERIOR SILLS, CURBS AND PARAPETS | DATE 3-1-68

REVISIONS

5/31/68

10-24-69



LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 STATE OF NEW YORK

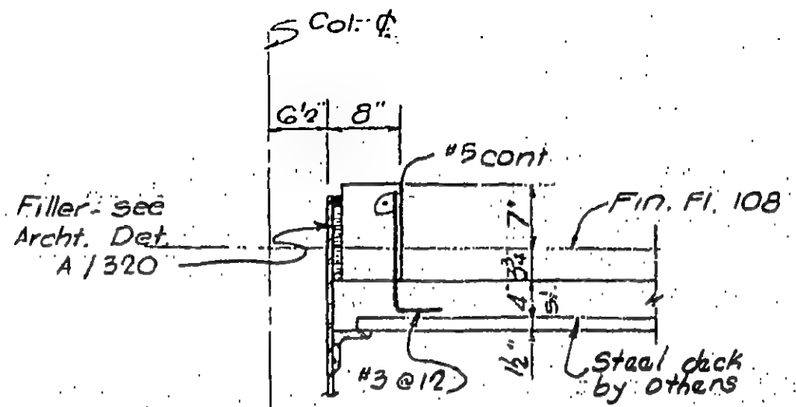
8-AB2-10.2

12

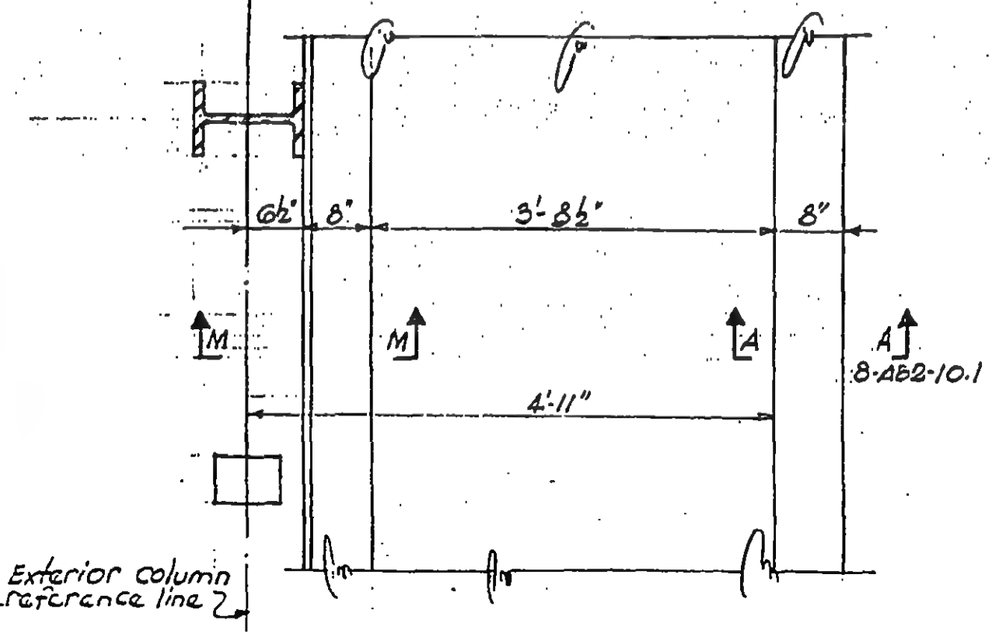
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE EXTERIOR SILLS, CURBS AND PARAPETS | DATE 3-1-68

REVISIONS



Section M-M



Detail E

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 84360
UNIVERSITY OF THE STATE OF NEW YORK

8-AB2-10.3

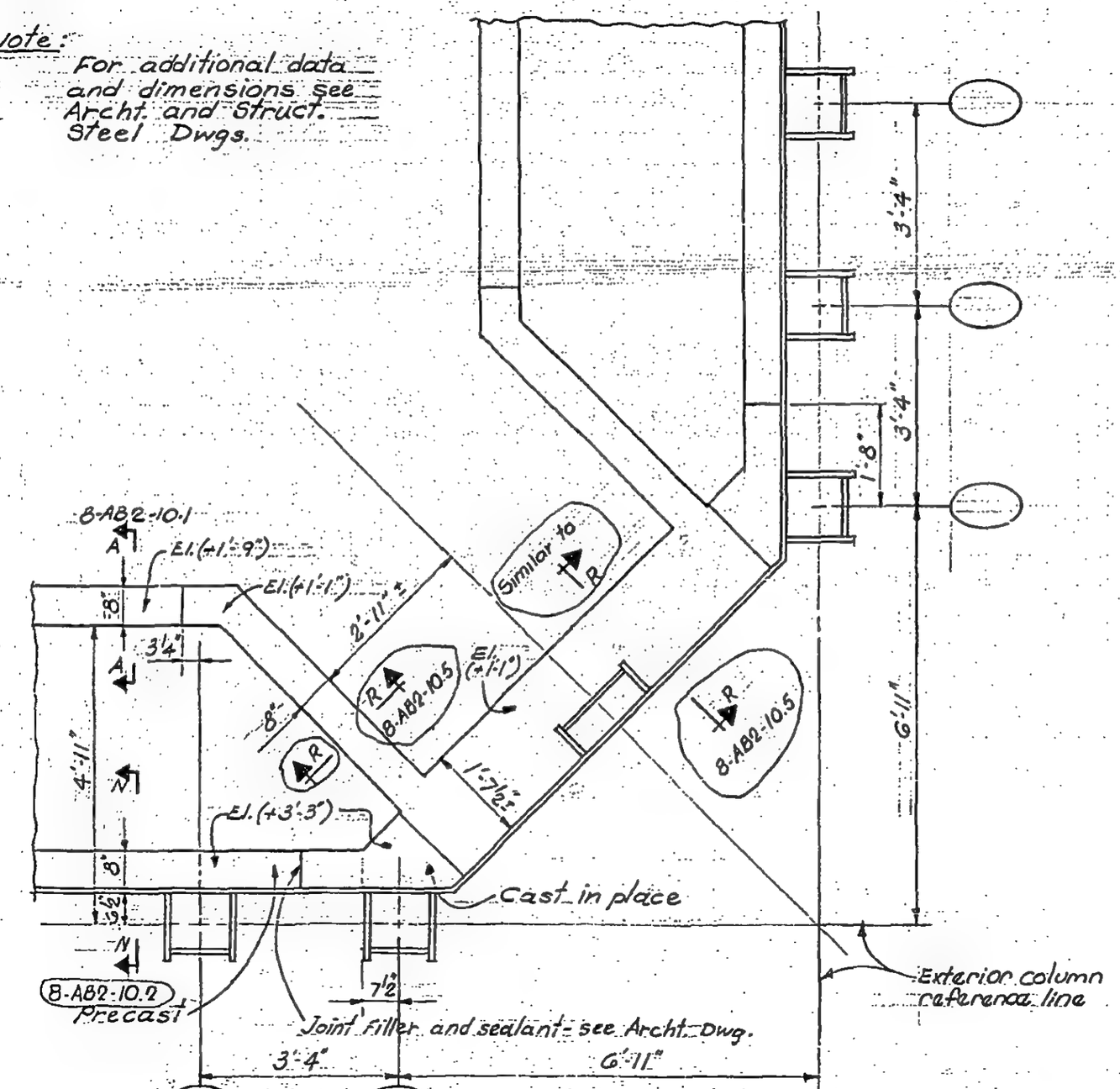
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE EXTERIOR SILLS, CURBS AND PARAPETS | DATE 3-1-68

REVISIONS

1-28-69

Note:
For additional data and dimensions see Archt. and Struct. Steel Dwgs.



REGISTERED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 84360
STATE OF NEW YORK

Detail P

Corner Parapets and Curbs Fl. 41 & 75

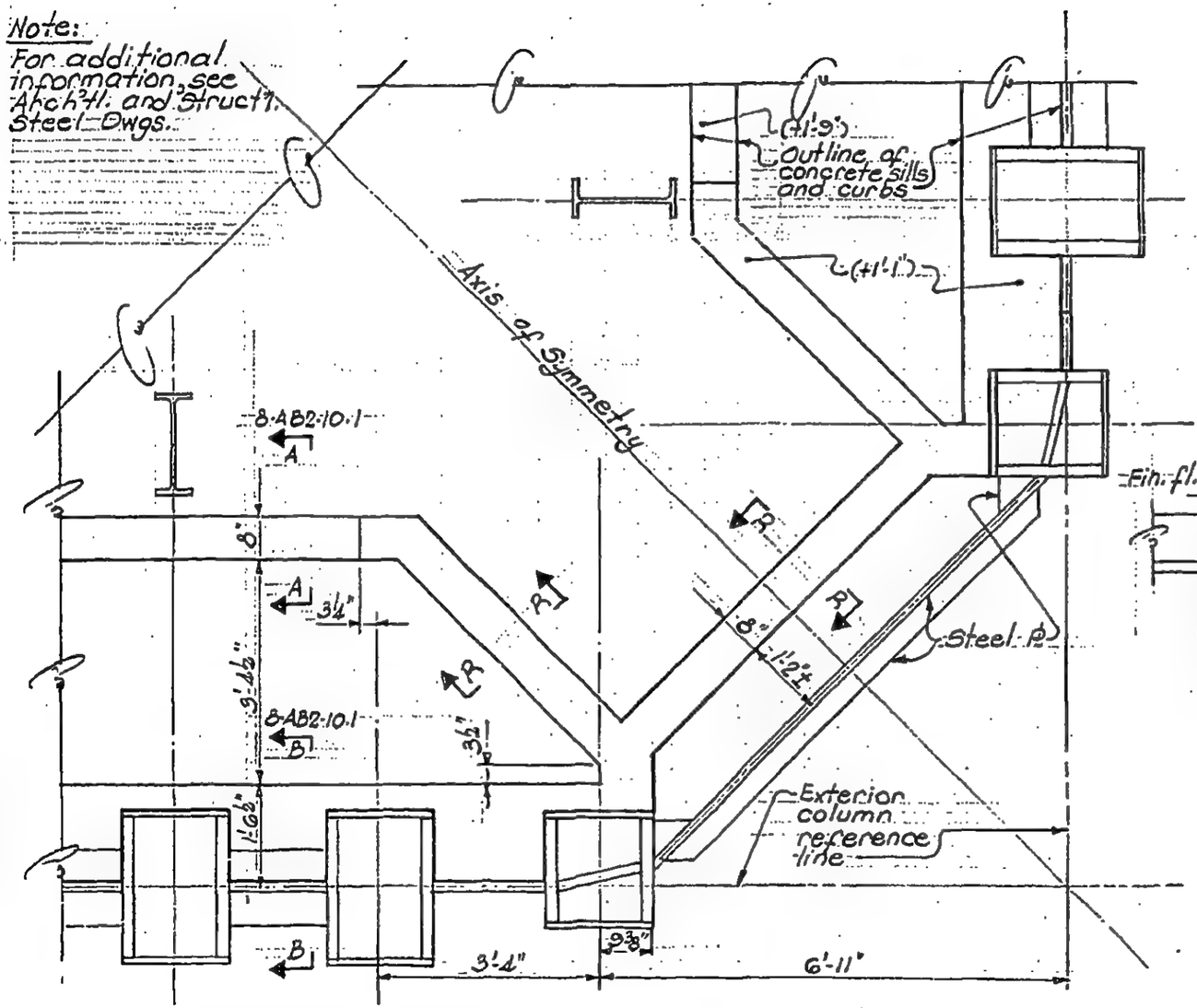
8-AB2-10.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

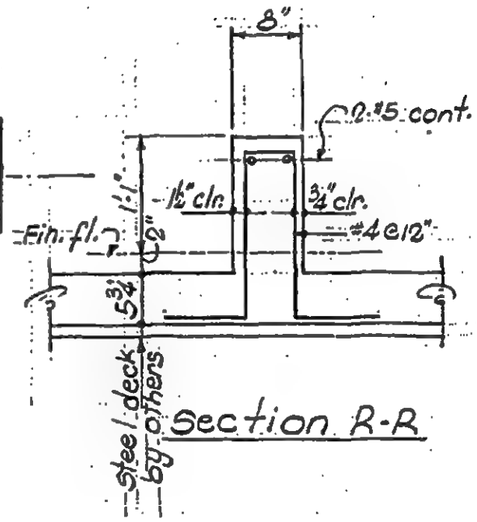
PROJECT: THE WORLD TRADE CENTER | TITLE: EXTERIOR SILLS, CURBS AND PARAPETS | DATE: 9-5-68

REVISIONS

Note:
For additional information, see Arch'tl. and Struct'l. Steel Dwgs.



DETAIL Q CORNER CURBS AND SILLS, FLOOR 7



Section R-R

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED
DRAWN
REVIEWED

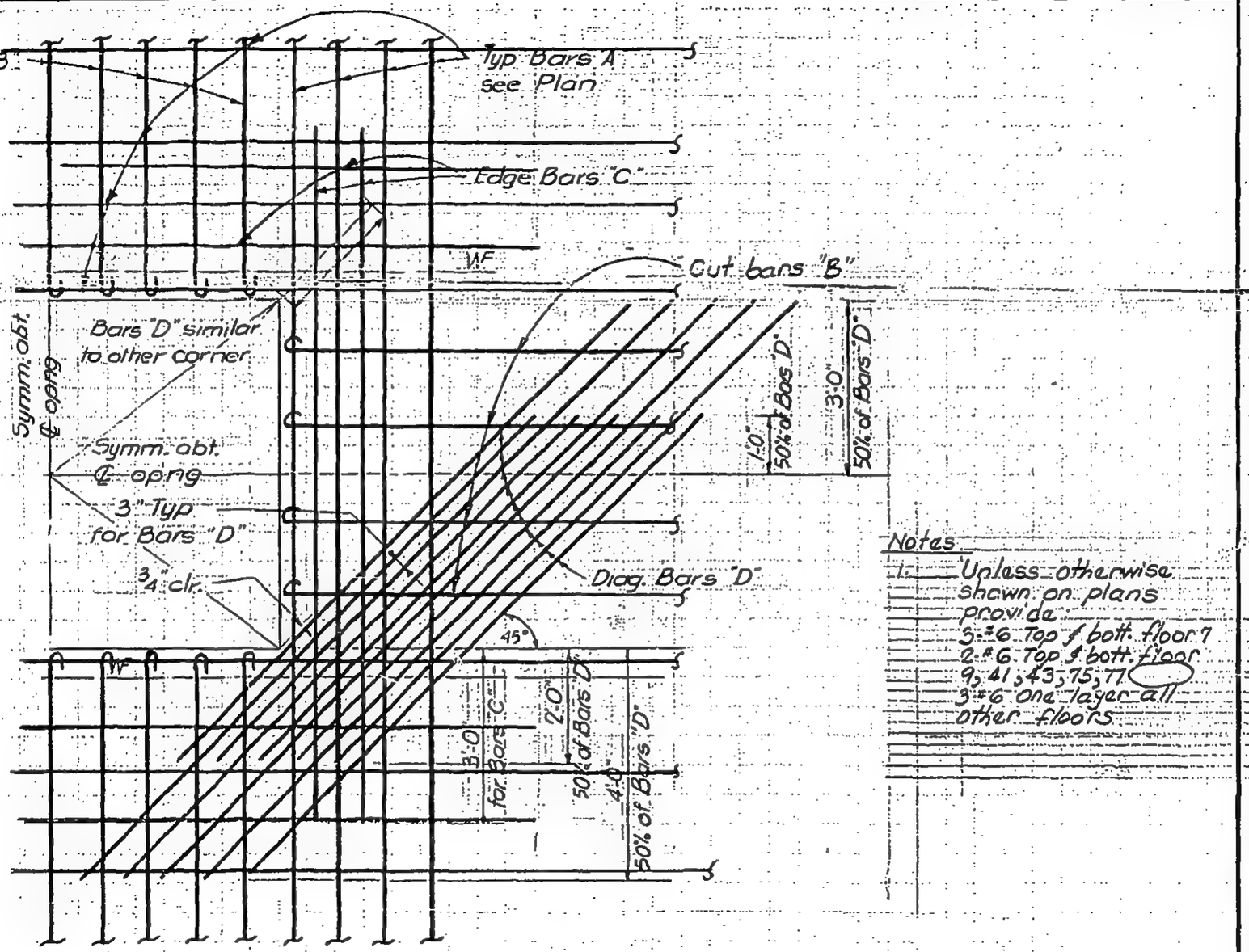
8-AB2-10.5

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE REINFORCEMENT AT LARGE OPENINGS IN FLOOR | DATE 3-1-68

REVISIONS

12-1-70



Notes

1. Unless otherwise shown on plans provide:
   5-#6 Top & bott. floor 7
   2-#6 Top & bott. floor 9, 41, 43, 75, 77
   3-#6 one layer all other floors

No. of Bars at Opng.

No. of Bars "C" (4 ea. side) = 0.50± x No. of Bars "B" (each layer)

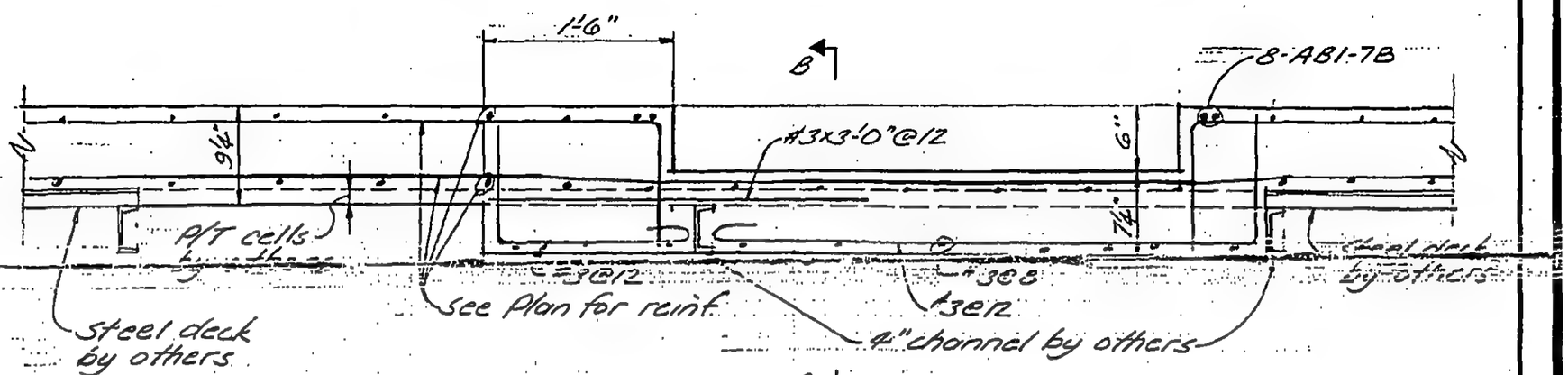
LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

8-AB2-11

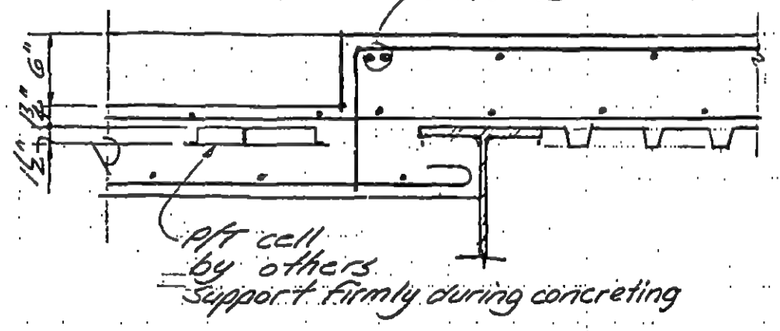
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE SECTIONS AT FLOOR DEPRESSION | DATE 10-24-69

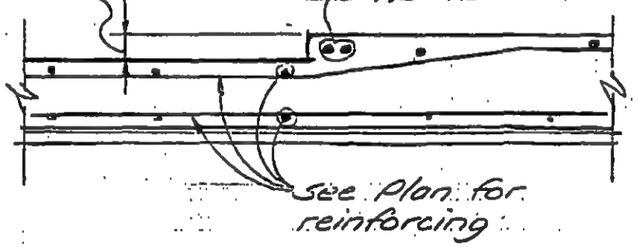
REVISIONS



Section A-A



Section B-B



Section C-C

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN

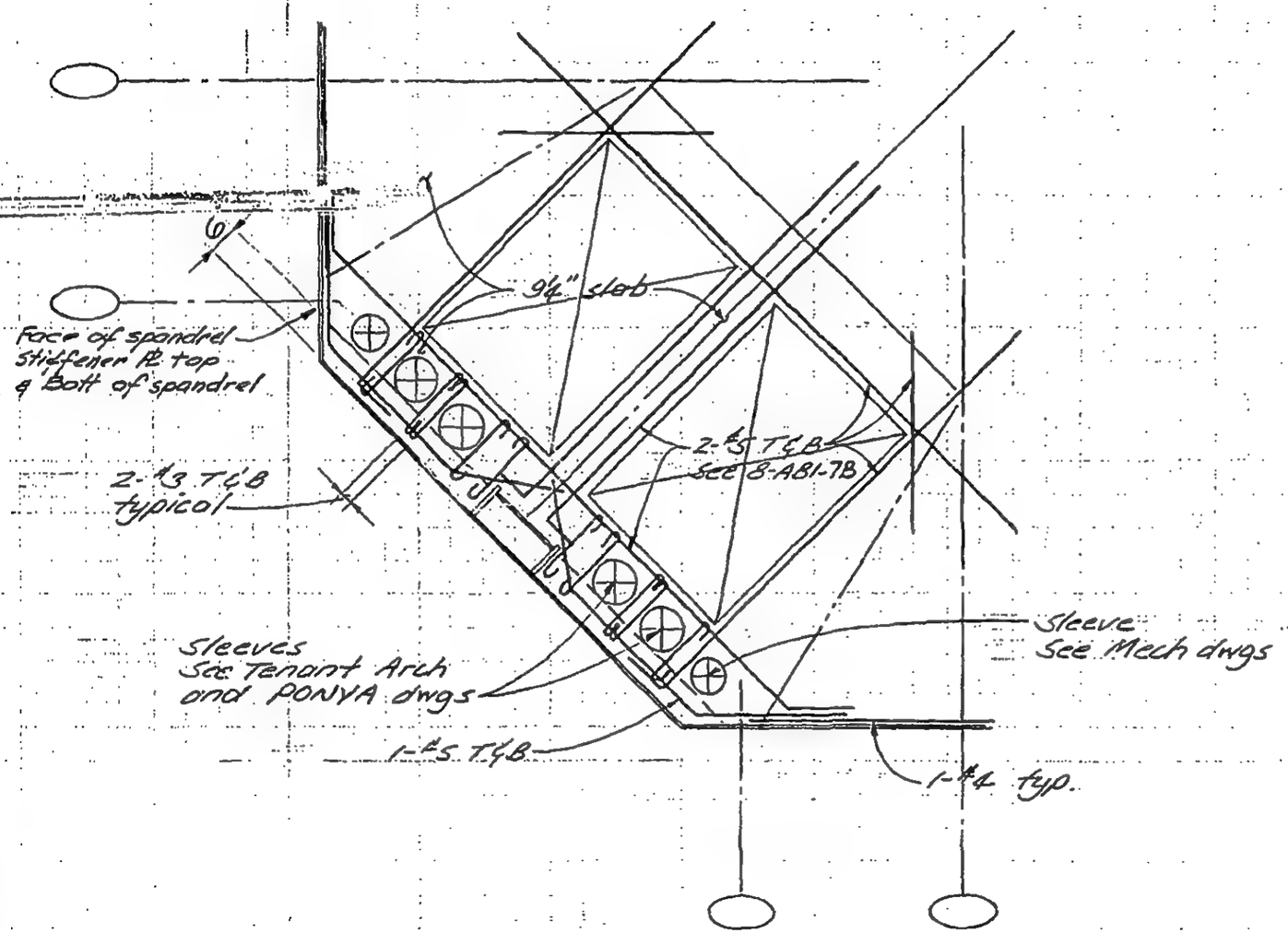
REVIEWED

B-AB2-12

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: FLOOR OPENING DETAILS | DATE: 10-24-69

REVISIONS



Detail A
Floor 43

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN J. Williams

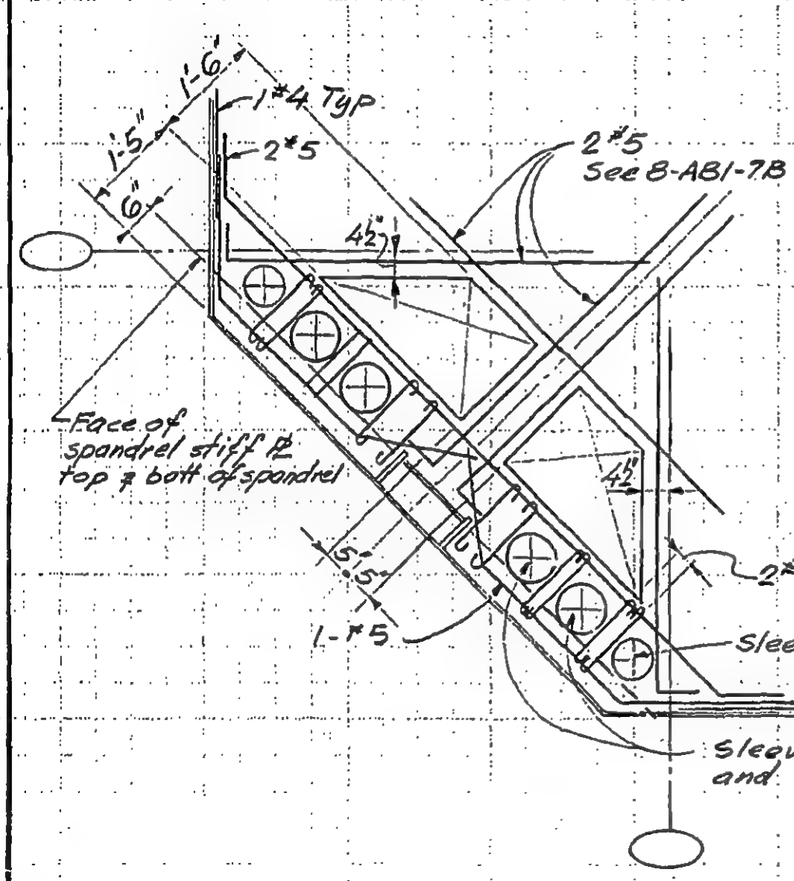
REVIEWED

8-AB2-13.1

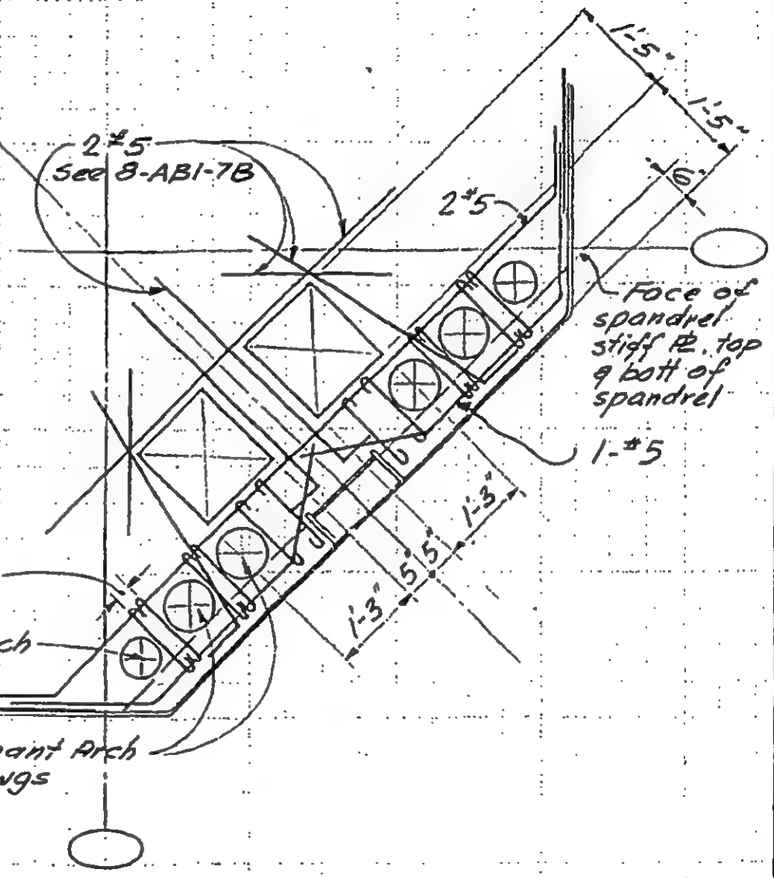
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: FLOOR OPENING DETAIL | DATE: 10-24-69

REVISIONS



Detail B
Floor 44



Detail C
Floor 44

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
NO. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN: J. Gricius

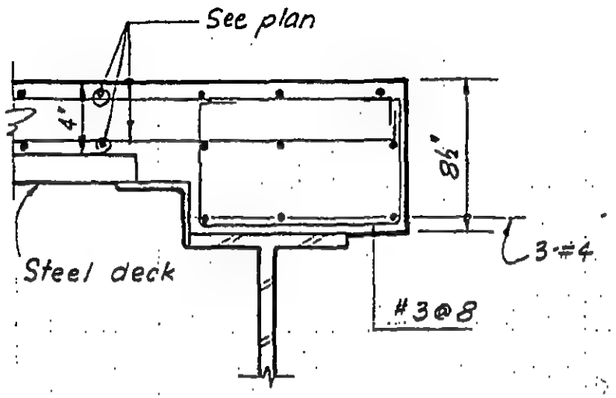
REVIEWED

8-AB2-13.2

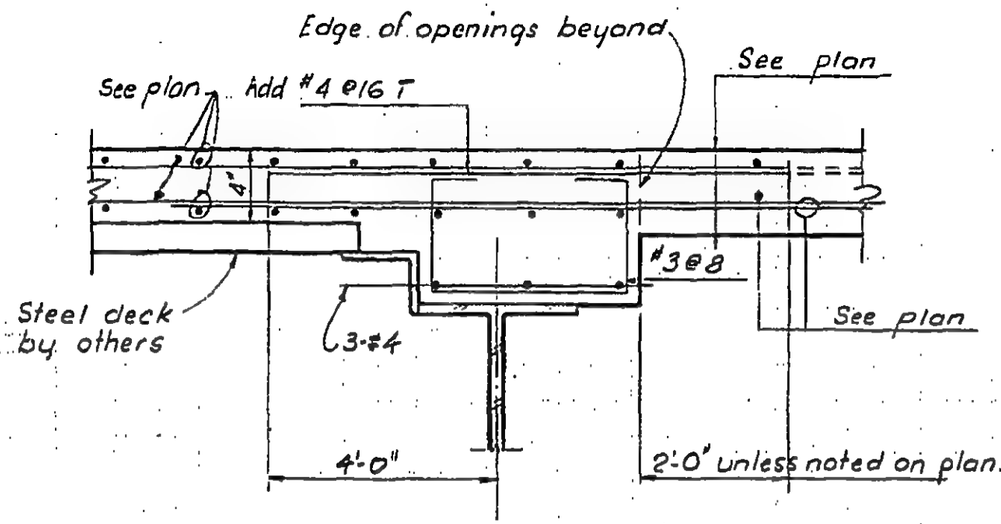
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TYPICAL SECTIONS THRU CORE WALL | DATE 3/19/70

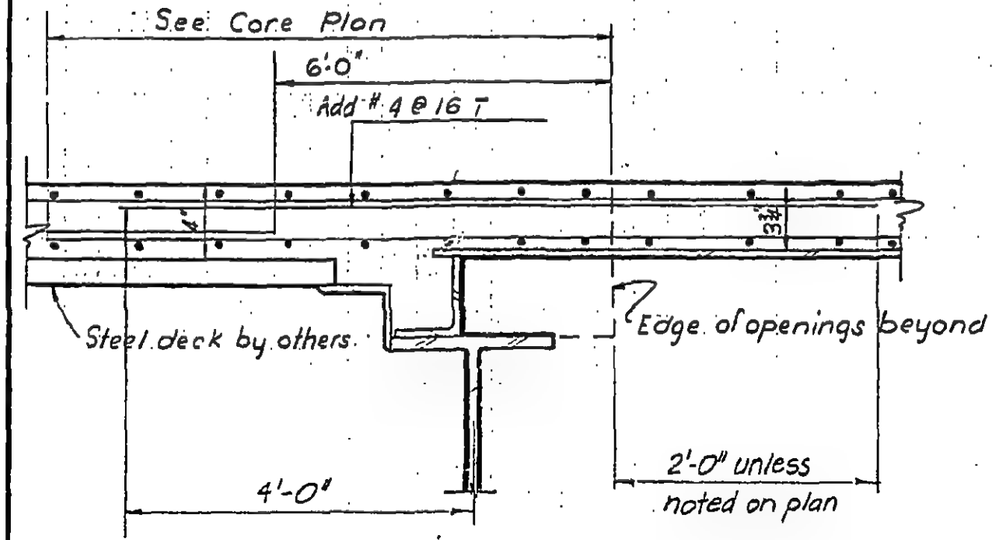
REVISIONS



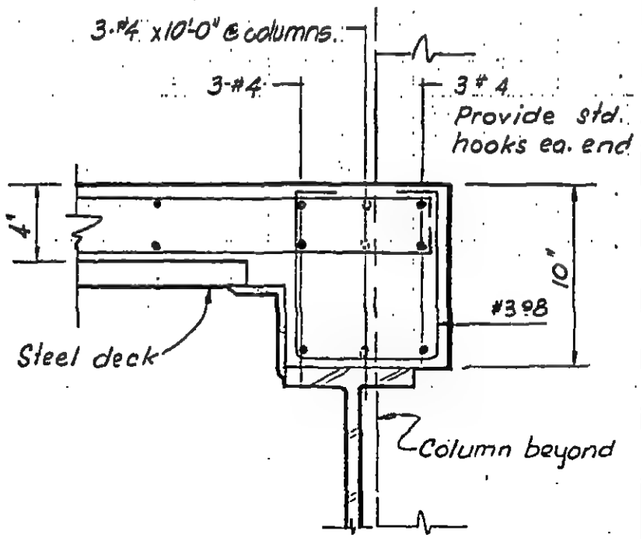
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

DESIGNED T. O'Neill
DRAWN T. Terrelonge
REVIEWED

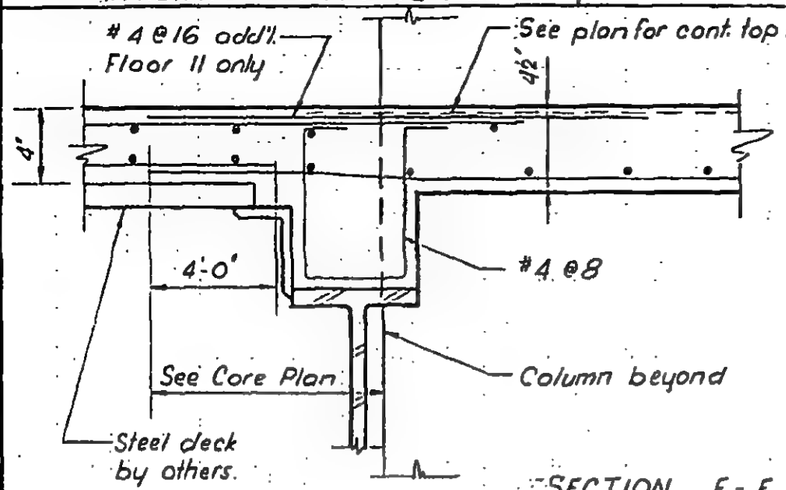
LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

8-AB2-14.1

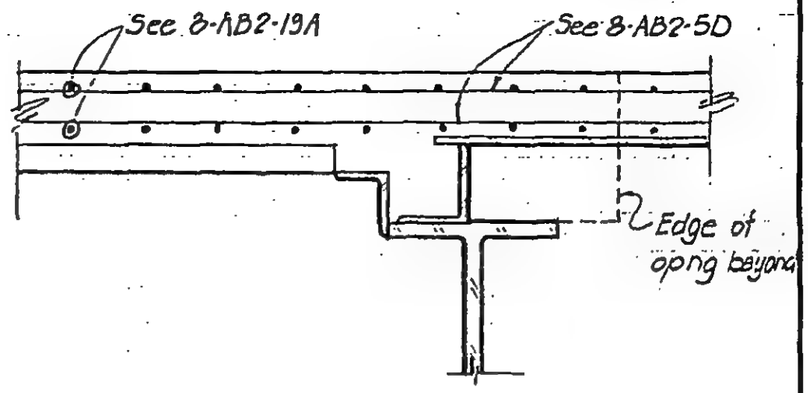
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU CORE WALL | DATE: 3/19/70

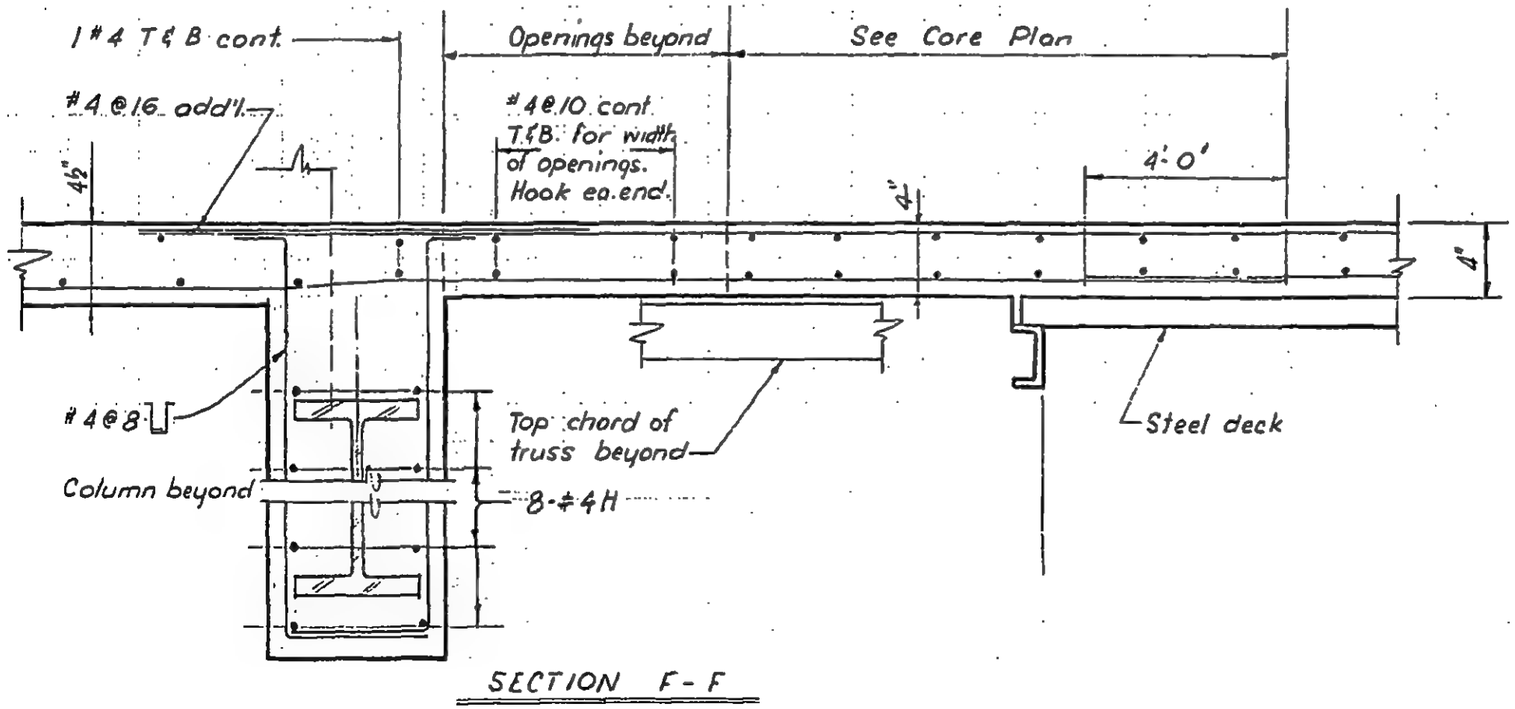
REVISIONS



SECTION E-E



SECTION G-G



SECTION F-F

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

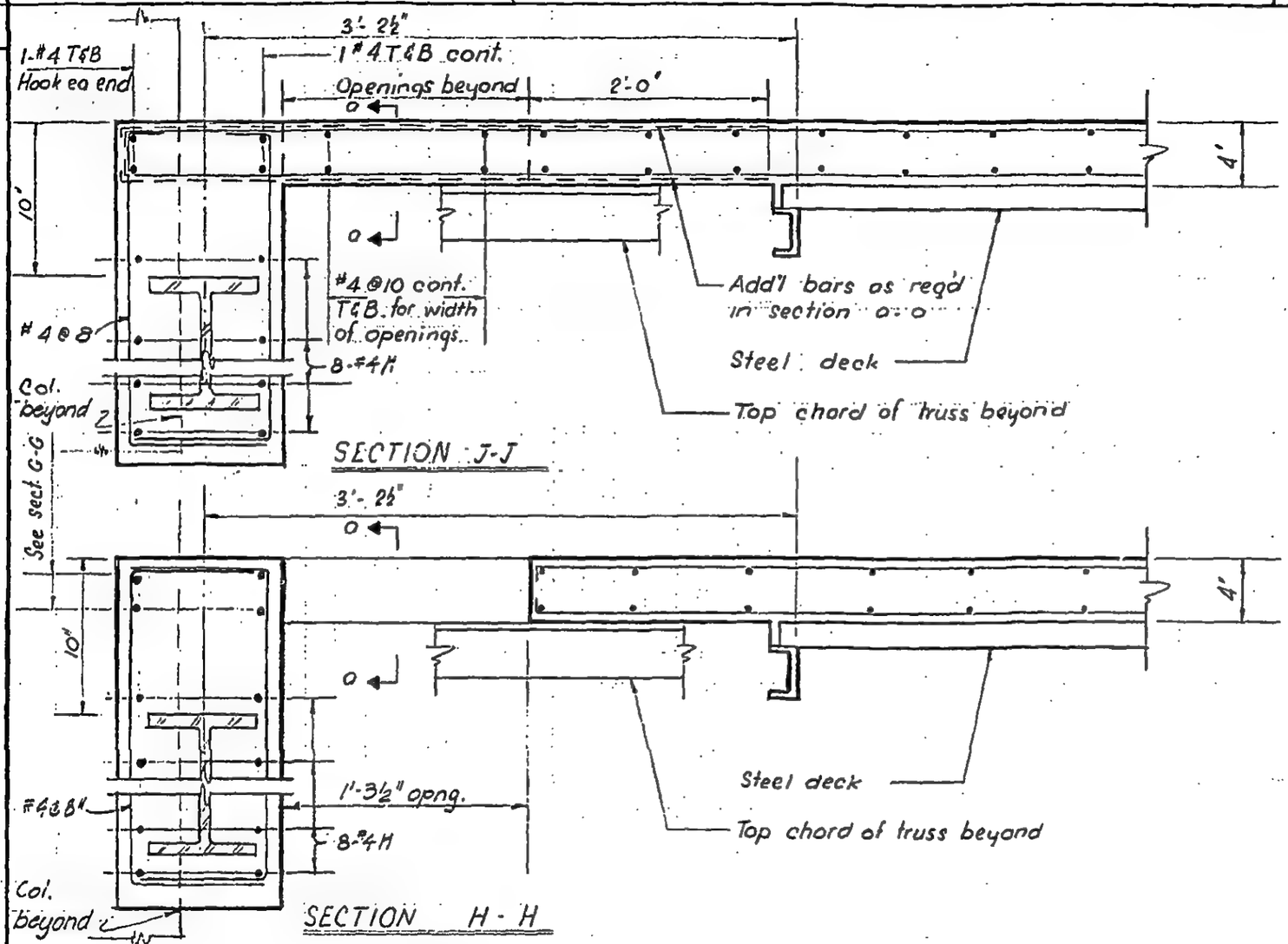
DESIGNED: T. O'Neill
DRAWN: T. Terrelonge
REVIEWED:

8-AB2-14.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU CORE WALL | DATE: 3-19-70

REVISIONS



LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T. O'Neill

DRAWN: T. Terrelonge

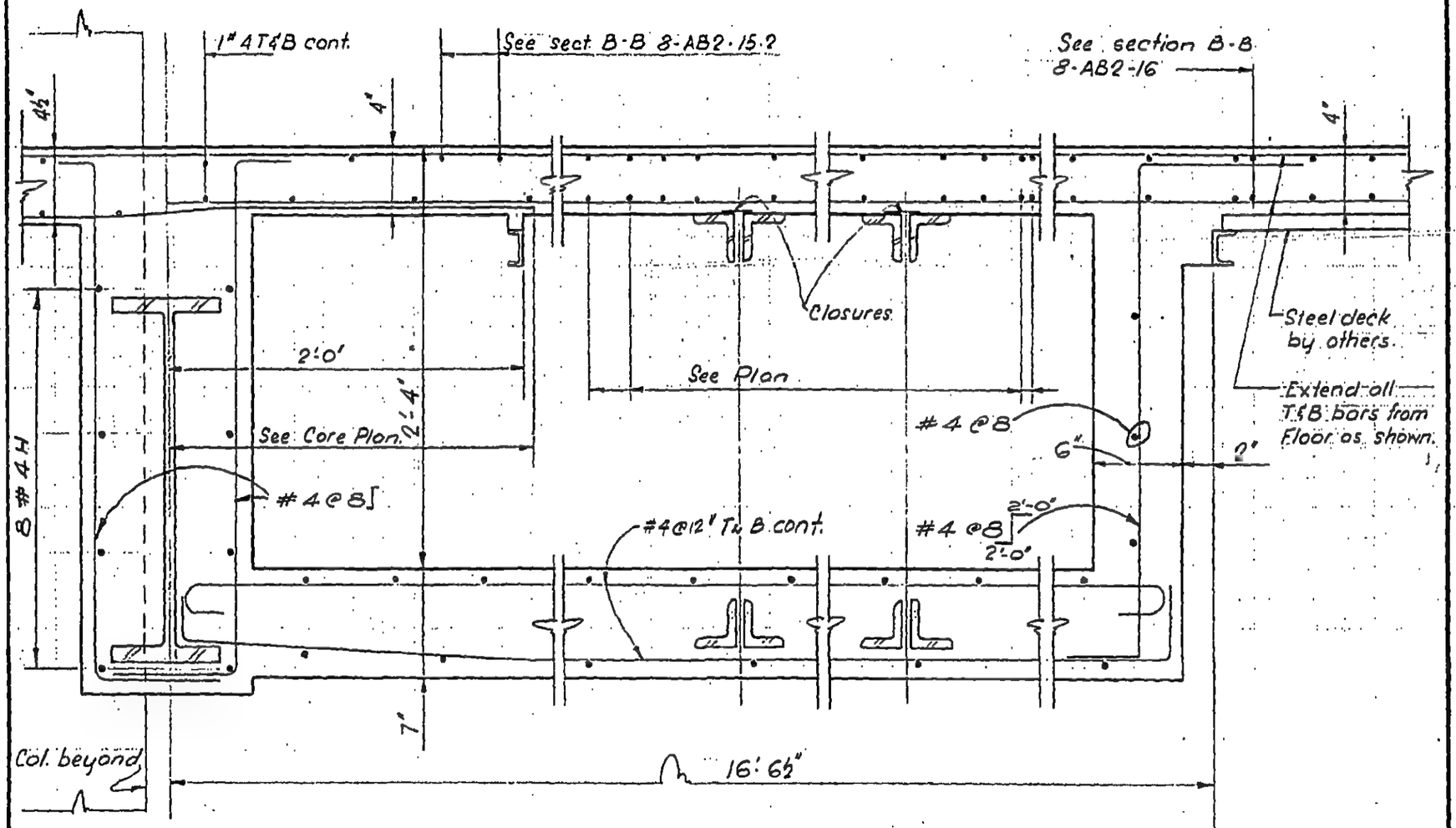
REVIEWED:

8-AB2-14.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: DETAILS AT SPLICING CHAMBER | DATE: 3-19-70.

REVISIONS



SECTION A - A

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

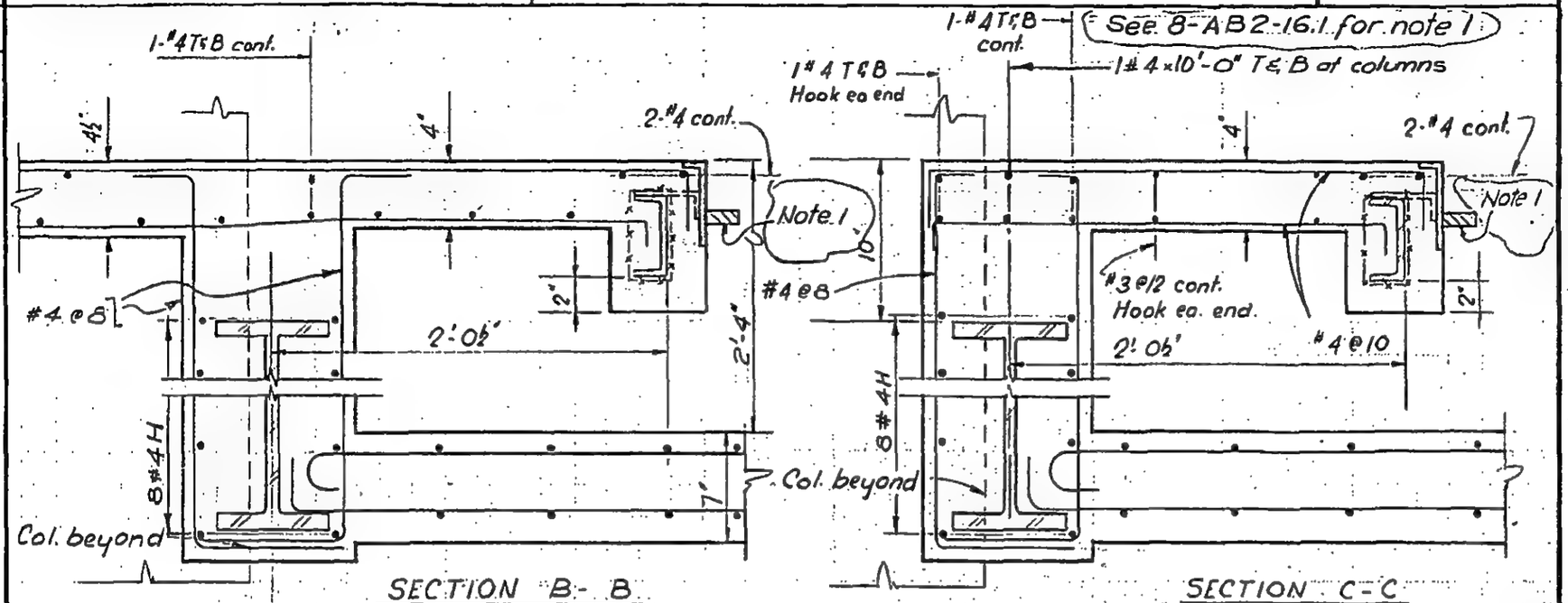
DESIGNED: T O'Neill
DRAWN: T. Terrelonge
REVIEWED:

8-AB2-15.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE DETAILS AT SPLICING CHAMBER | DATE 3-19-70

REVISIONS
5/22/70



Note: Place removable slab after installation of conduits and a minimum of 7 days after main slab.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED T. O'Neill
DRAWN T. Terrelonge
REVIEWED

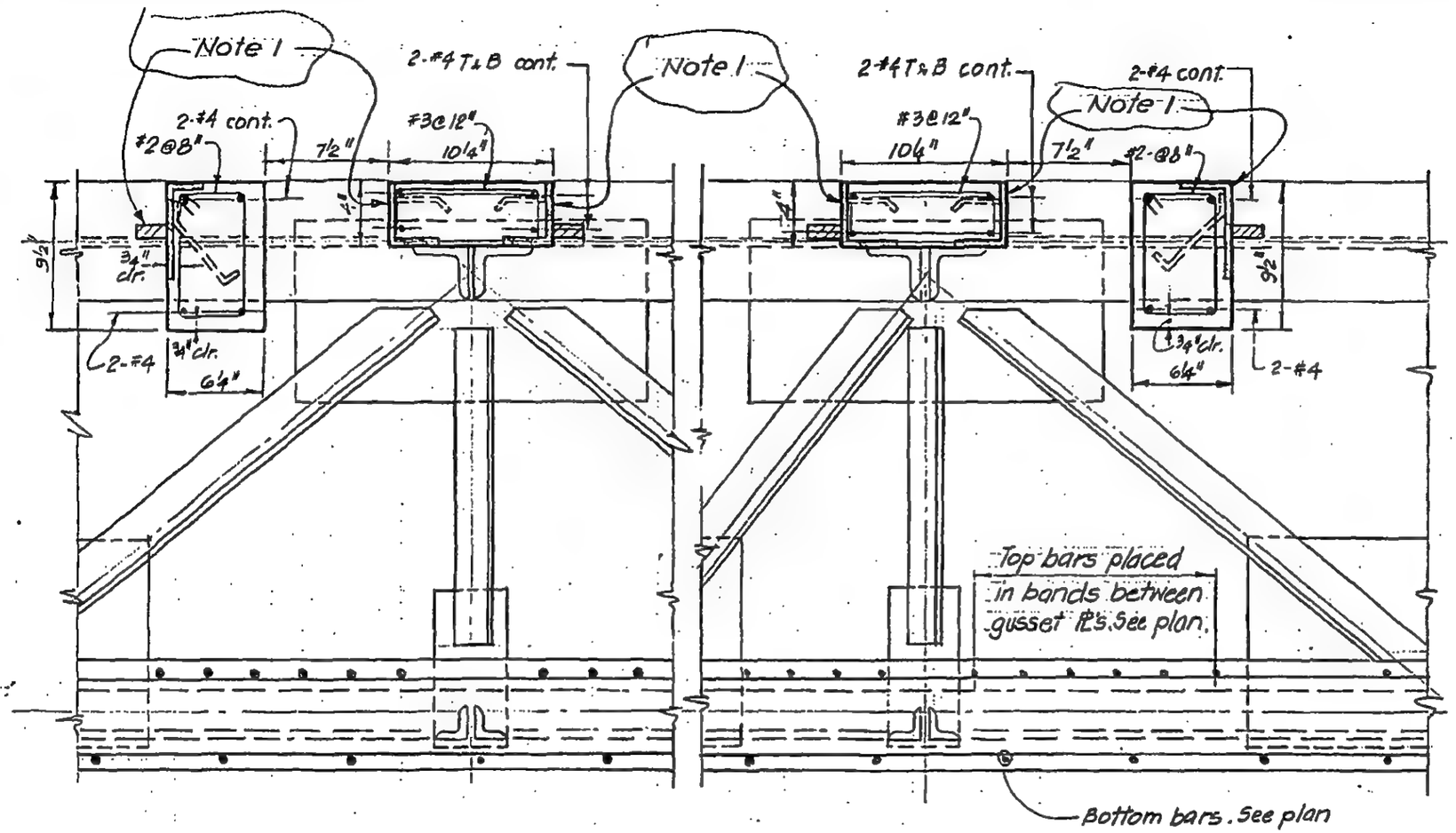
8-AB2-15.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE DETAILS AT SPLICING CHAMBER | DATE 3/19/70

REVISIONS

5/22/70



SECTION A-A

Note 1 For embedment details see Pope, Evans & Robbins Drawings 68330 - S100

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No 34360 UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN V.H.A

REVIEWED

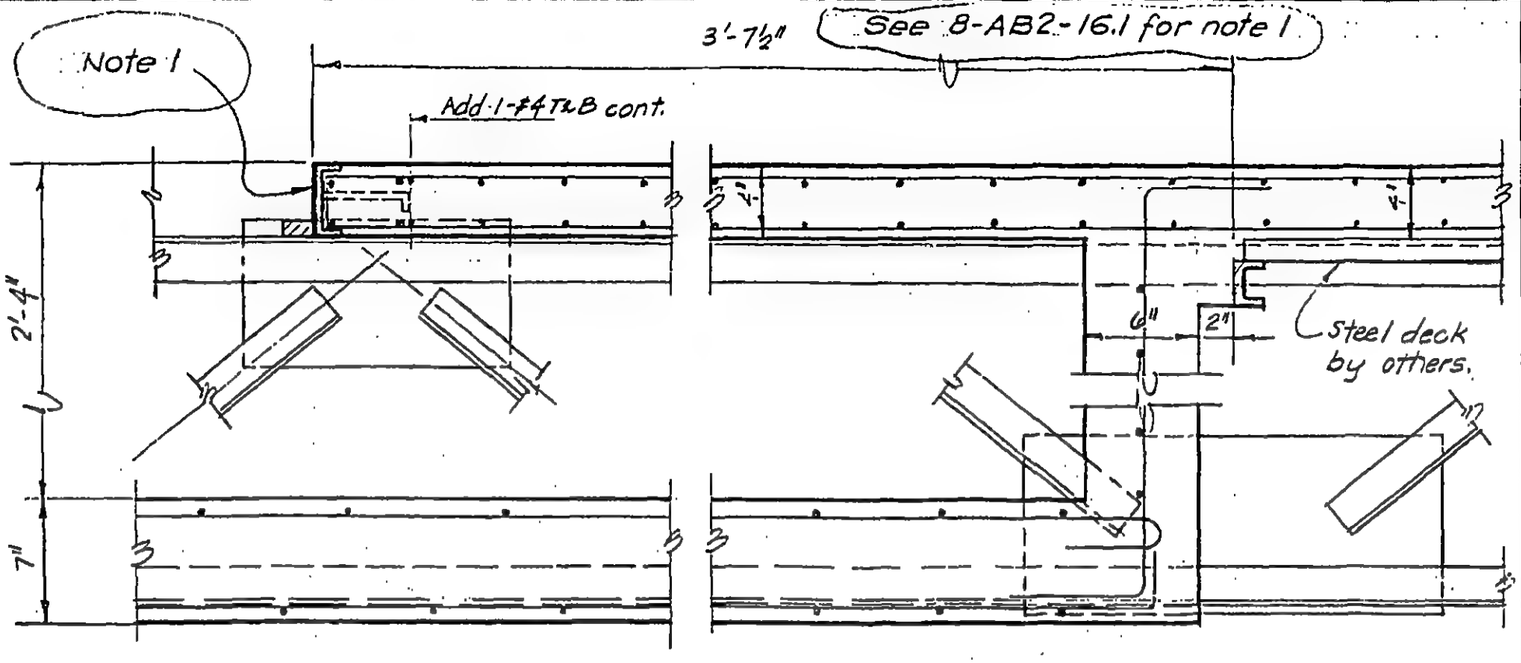
8-AB2 - 16:1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

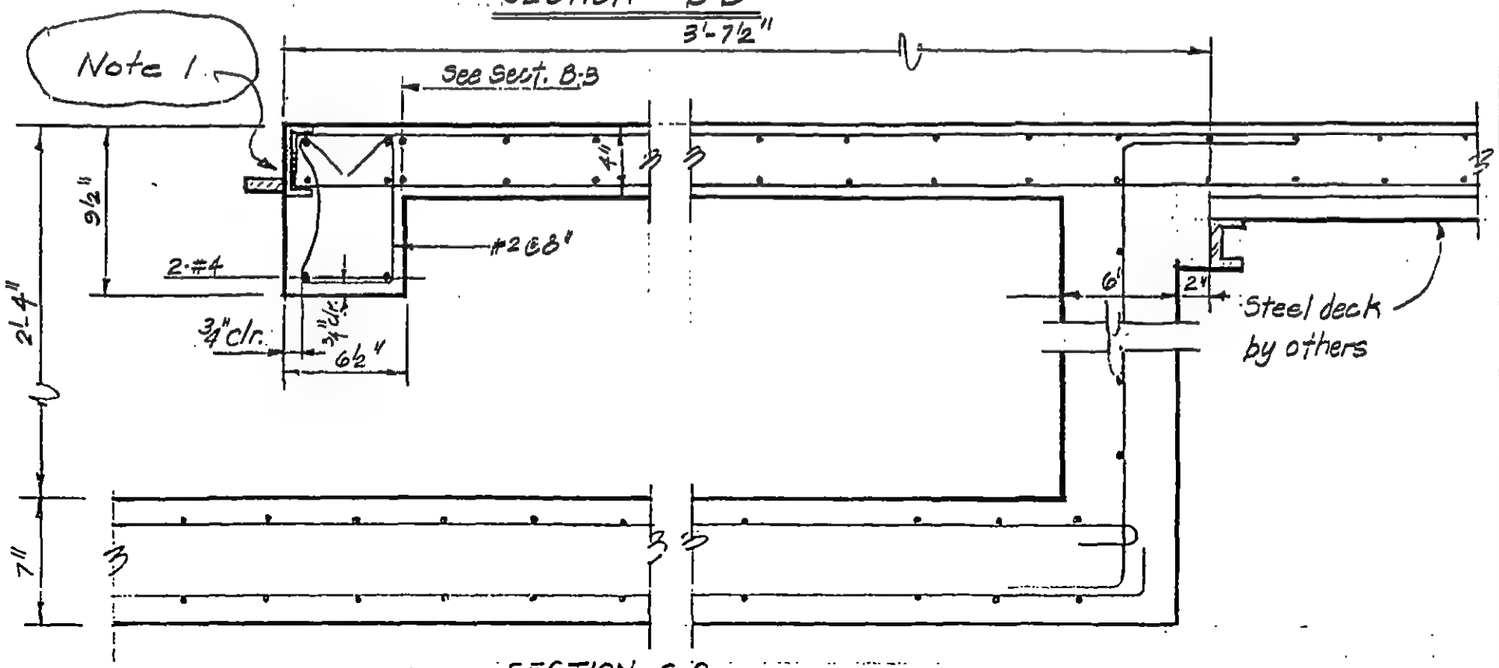
PROJECT THE WORLD TRADE CENTER | TITLE DETAILS AT SPLICING CHAMBER | DATE 3/19/70

REVISIONS

5/22/70



SECTION B-B



SECTION C-C

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED
T. O'Neill
DRAWN
P. Ozeki
REVIEWED

8-AB2-16.2

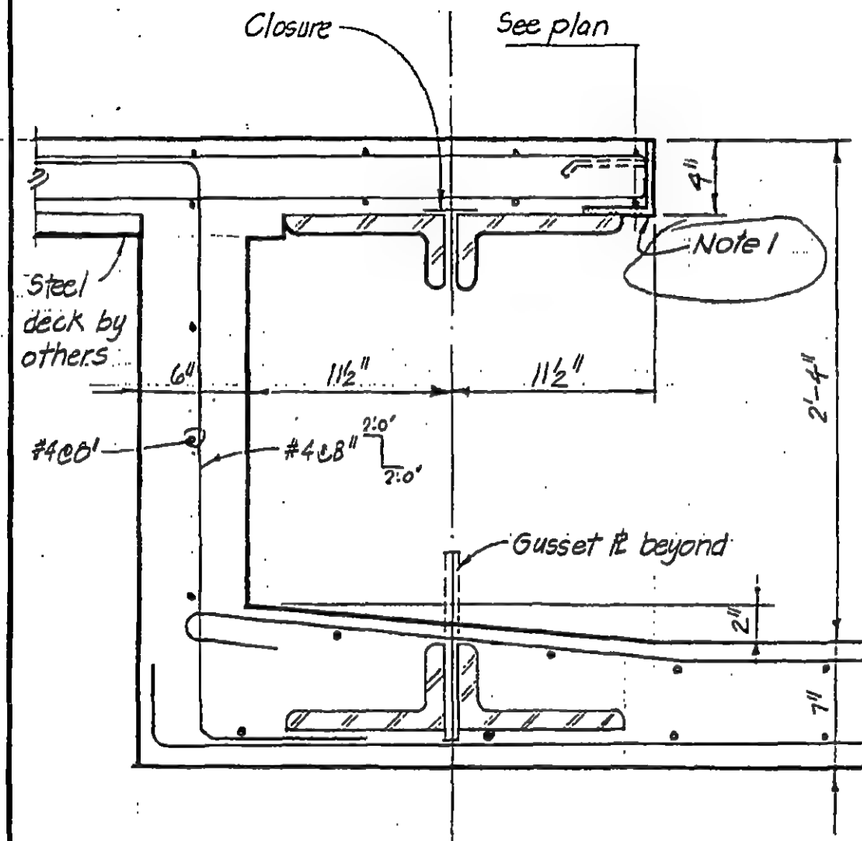
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE DETAILS AT SPLICING CHAMBER | DATE 3/19/70

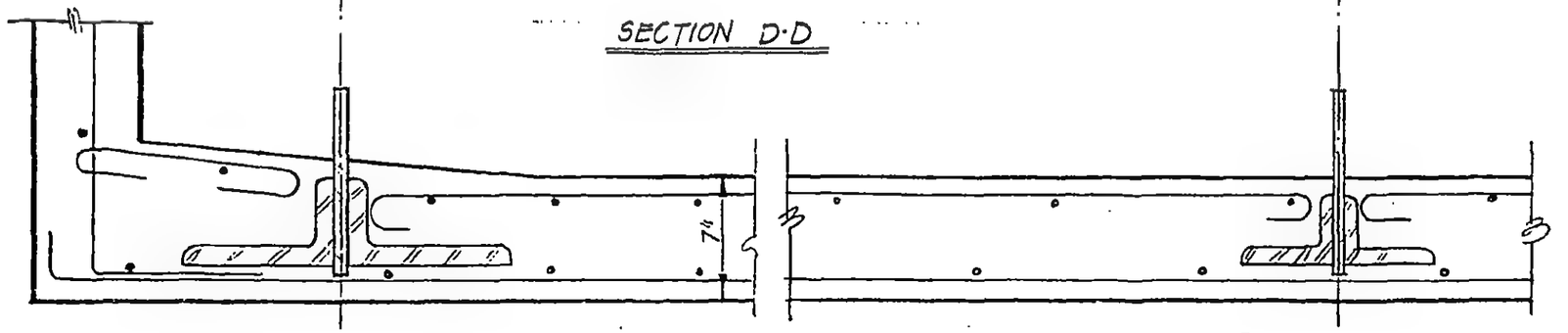
REVISIONS

5/22/70

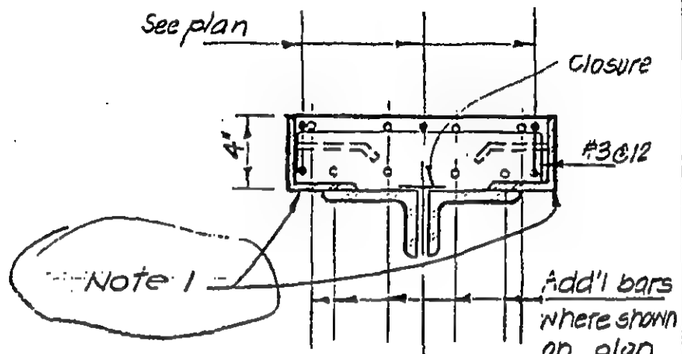
See 8-AB2-16.1 for note 1



SECTION D-D



SECTION D-D of GUSSET PLs



LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
STATE OF NEW YORK

DESIGNED T. O'Neill

DRAWN P.M. Ozeki

REVIEWED

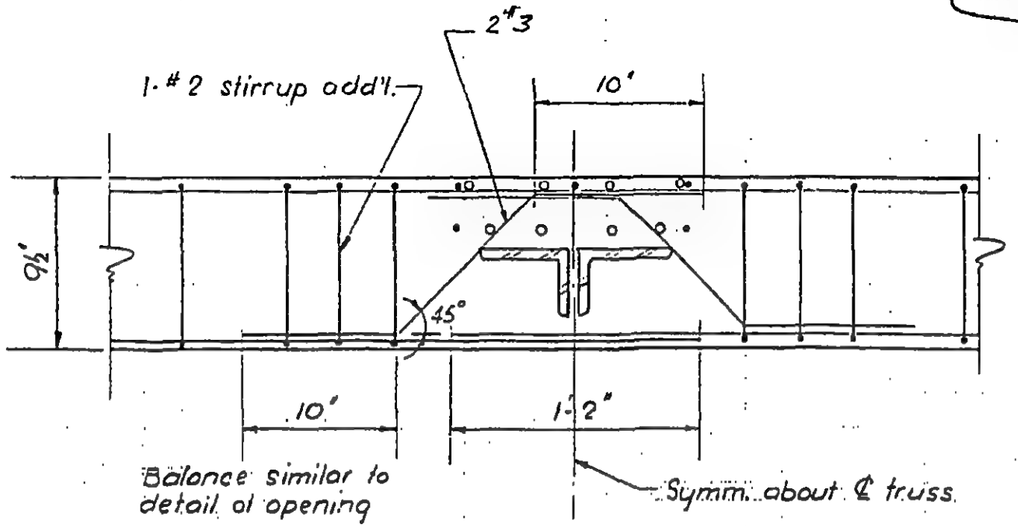
BAB-2-16.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

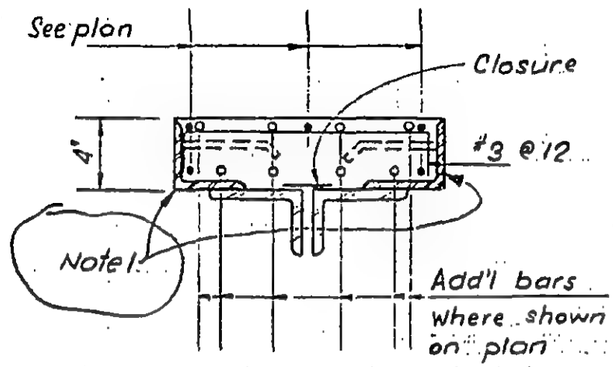
PROJECT: THE WORLD TRADE CENTER | TITLE: DETAILS AT SPLICING CHAMBER | DATE: 3-19-70

REVISIONS
5/22/70

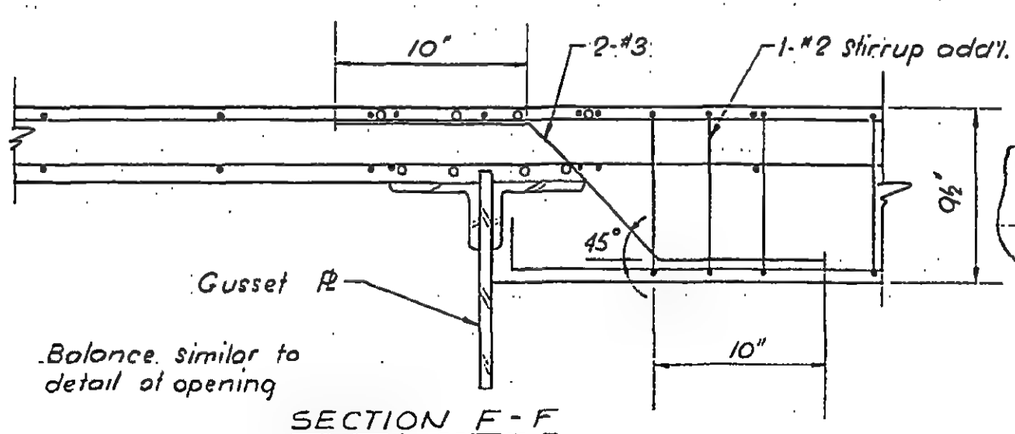
See 8-AB2-16.1 For note 1.



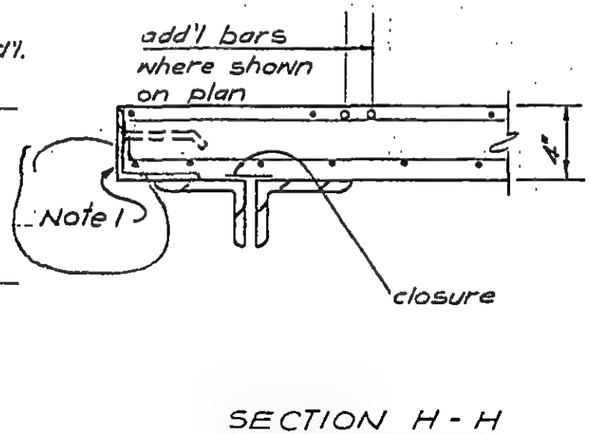
SECTION E-E
At continuous concrete beams



SECTION G-G
At openings



SECTION F-F
At discontinuous concrete beams.



SECTION H-H
At openings

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No 34360 — UNIVERSITY OF THE STATE OF NEW YORK

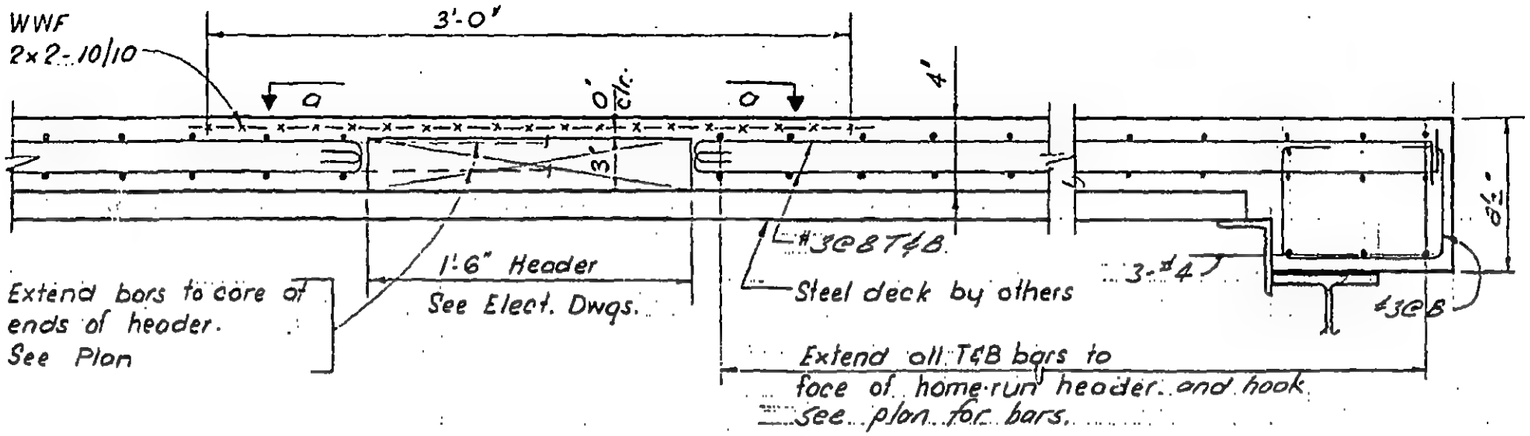
DESIGNED T. O'Neill.
DRAWN T. Terrelonge
REVIEWED

8-AB2-16.4

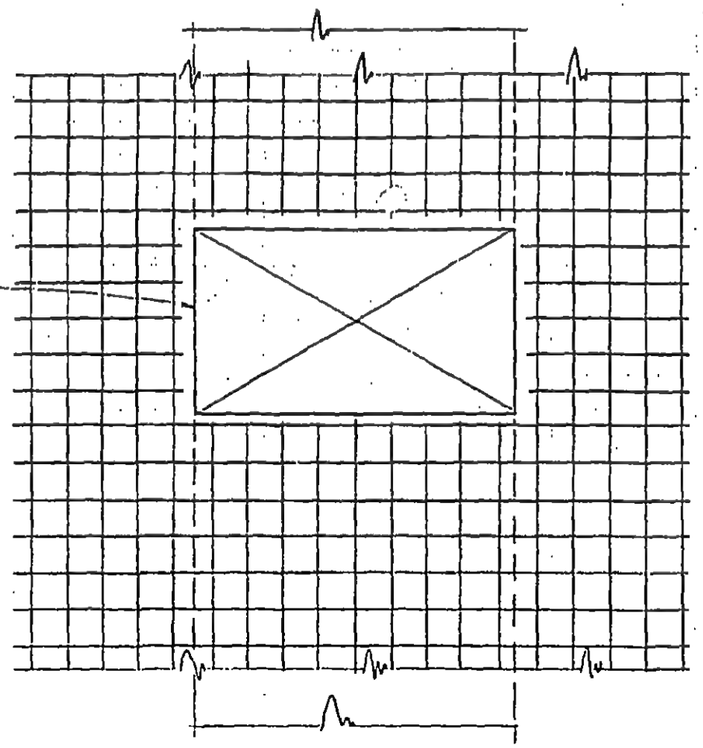
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT	TITLE	DATE
THE WORLD TRADE CENTER	TYPICAL DETAIL OF 3" HEADER IN 4" SLAB	3-19-70

REVISIONS



SECTION A-A



Plan a-a
Showing WWF over header

Note:-
Detail of WWF over home-run headers similar. Use 2'-6" width of 9" headers. See plan and electrical drawings.

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No 34960
UNIVERSITY OF THE STATE OF NEW YORK

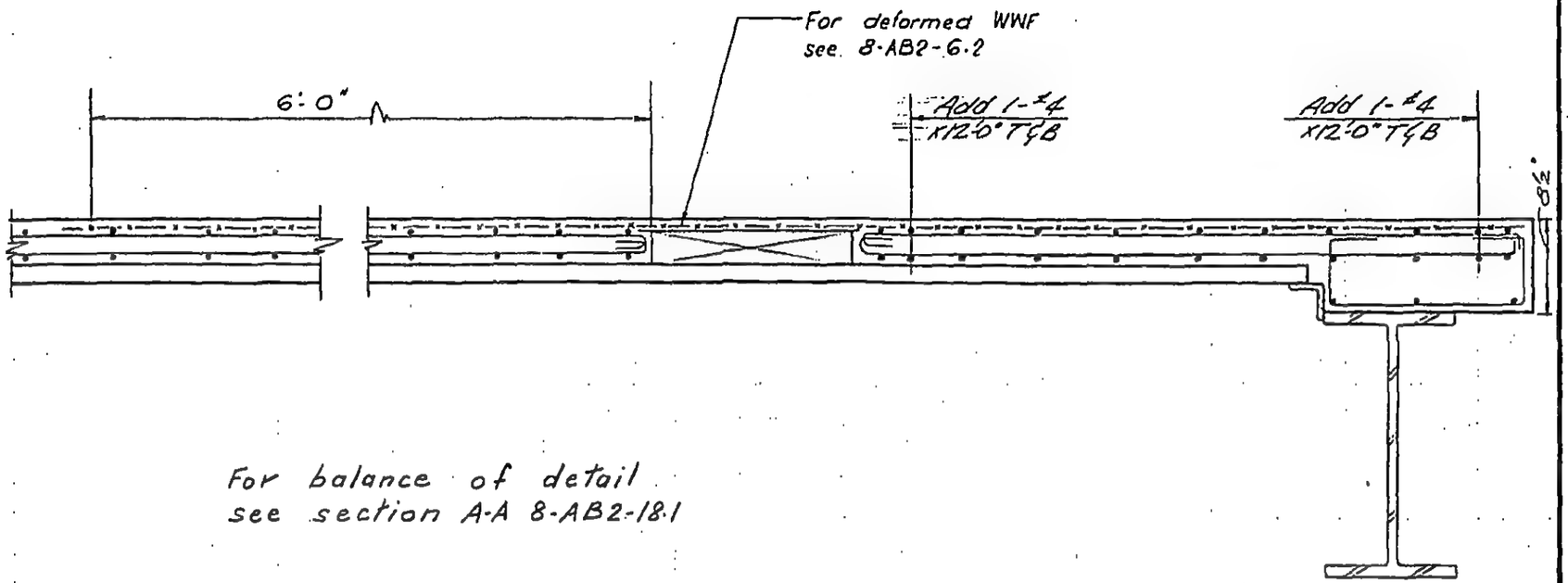
DESIGNED T O'Neill
DRAWN T Terrelonge
REVIEWED

8-AB2-18.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL DETAIL OF 3" HEADER IN 4' SLAB | DATE: 3-19-70

REVISIONS



For balance of detail
see section A-A 8-AB2-18.1

SECTION B - B

Notes

1. Lap deformed WWF with 2x2 - 10/10 WWF in adjacent bay 4' min. between end wires. Laps over header not permitted.

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T. O'Neill
DRAWN: T. Torrelonge
REVIEWED:

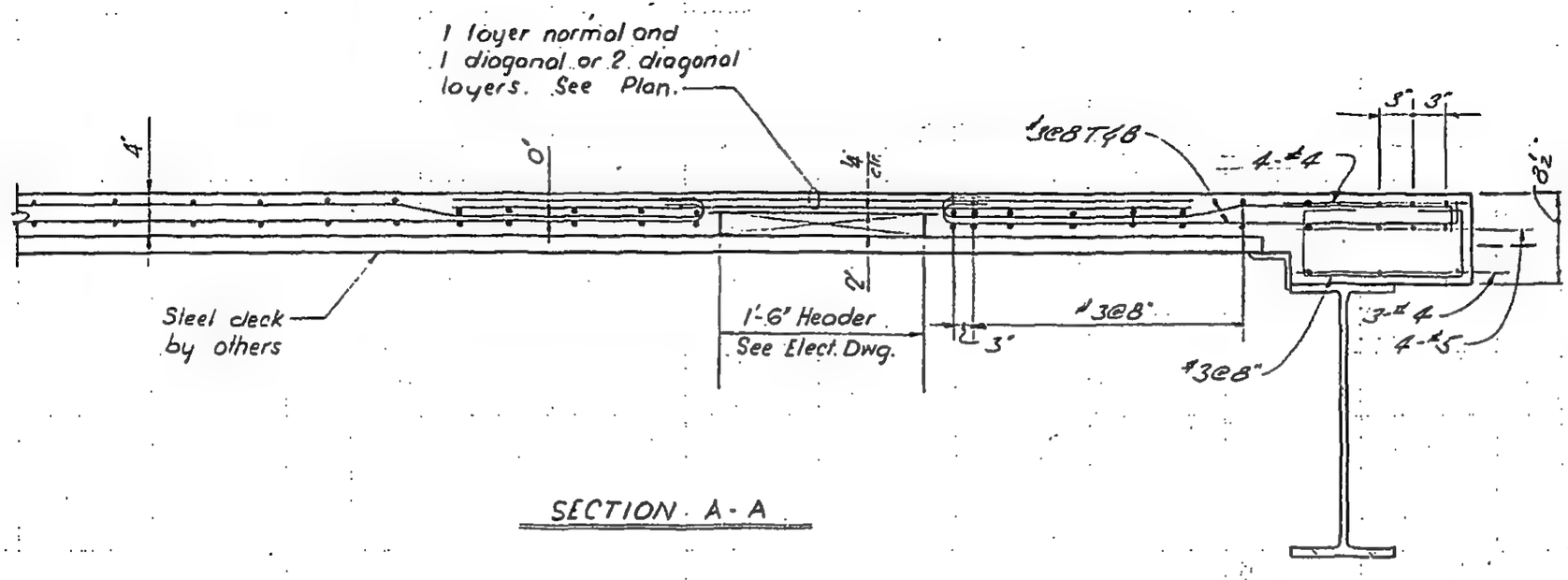
8-AB2-18.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

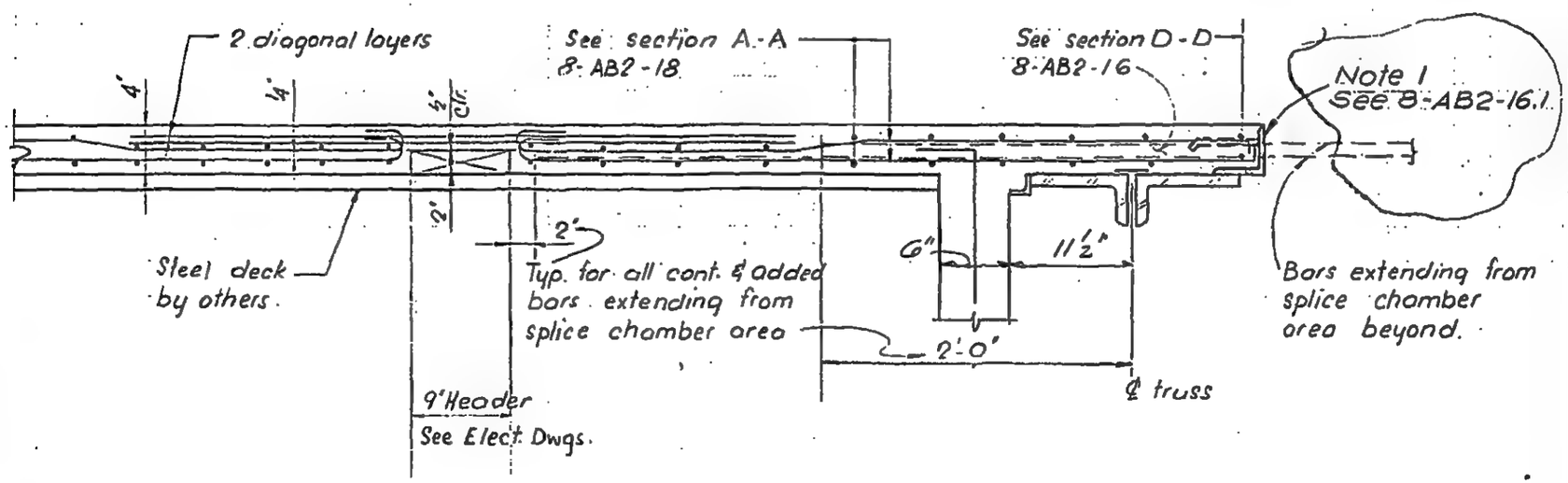
PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL DETAIL OF 2" HEADER IN 4" SLAB | DATE: 3-19-70

REVISIONS

5/22/70



SECTION A-A



SECTION B-B

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T. O'Neill

DRAWN: T. Terrelonge

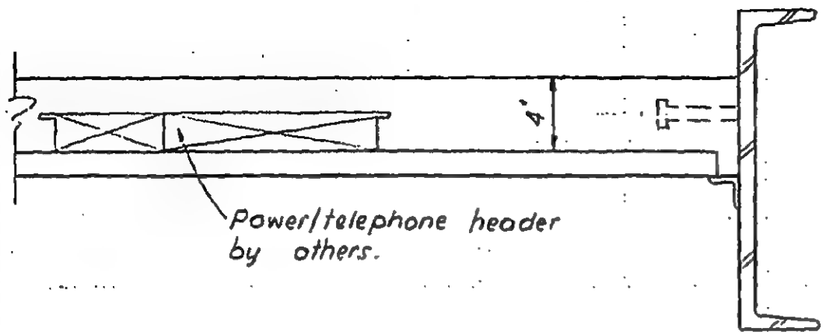
REVIEWED:

8-AB2-19

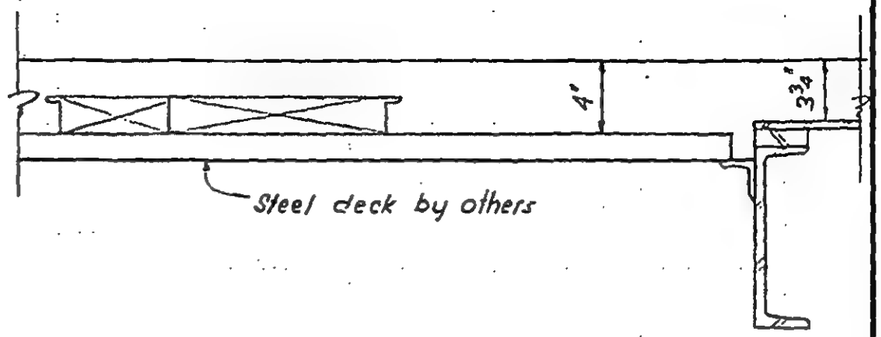
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU CORE WALL | DATE: 3-19-70

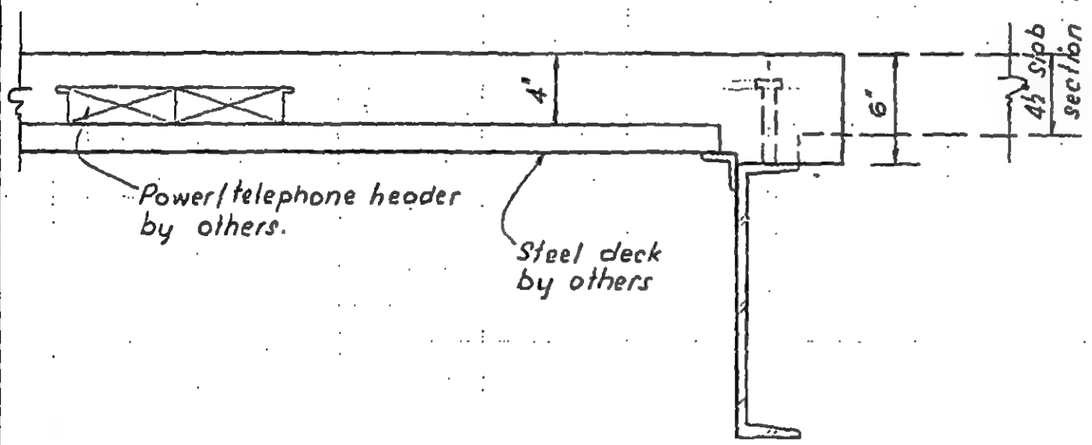
REVISIONS



SECTION A-A



SECTION B-B



SECTION C-C

SECTION D-D

Note: Reinf. not shown.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T O'Neill

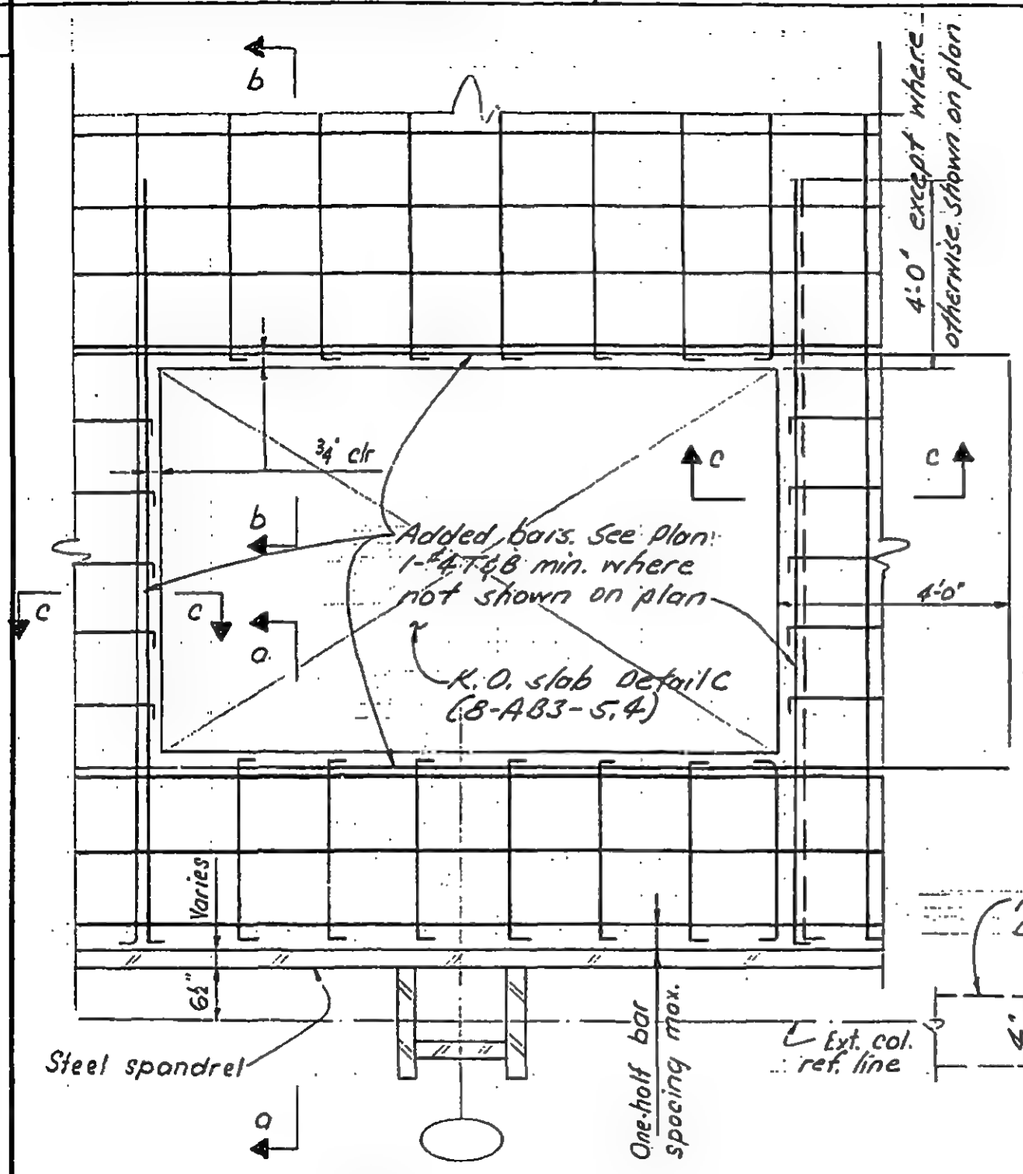
DRAWN: T. Terrelonge

REVIEWED:

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

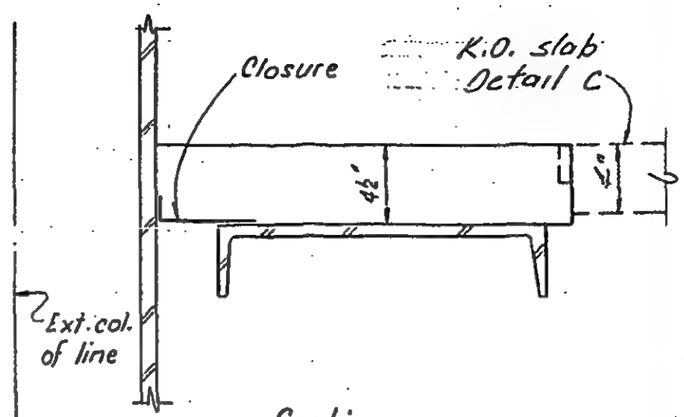
PROJECT	TITLE	DATE
THE WORLD TRADE CENTER	DETAIL AT OPENINGS NEAR EXTERIOR WALL	3-19-70

REVISIONS

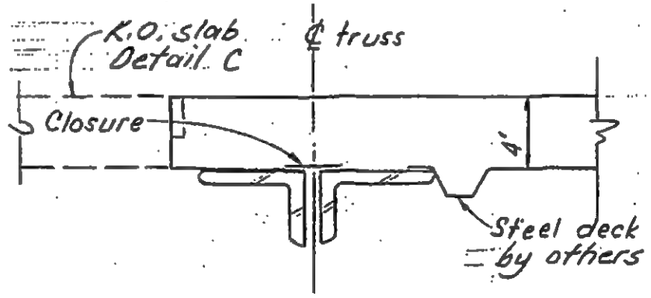


DETAIL A

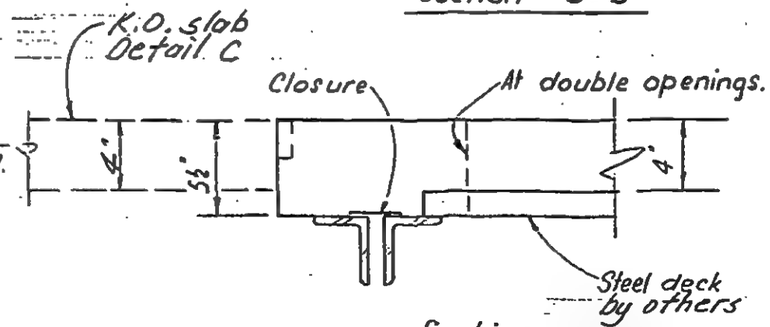
DETAIL C as noted



Section a-a



Section b-b



Section c-c

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — NO 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED T. O'Neill

DRAWN T. Terrelonge

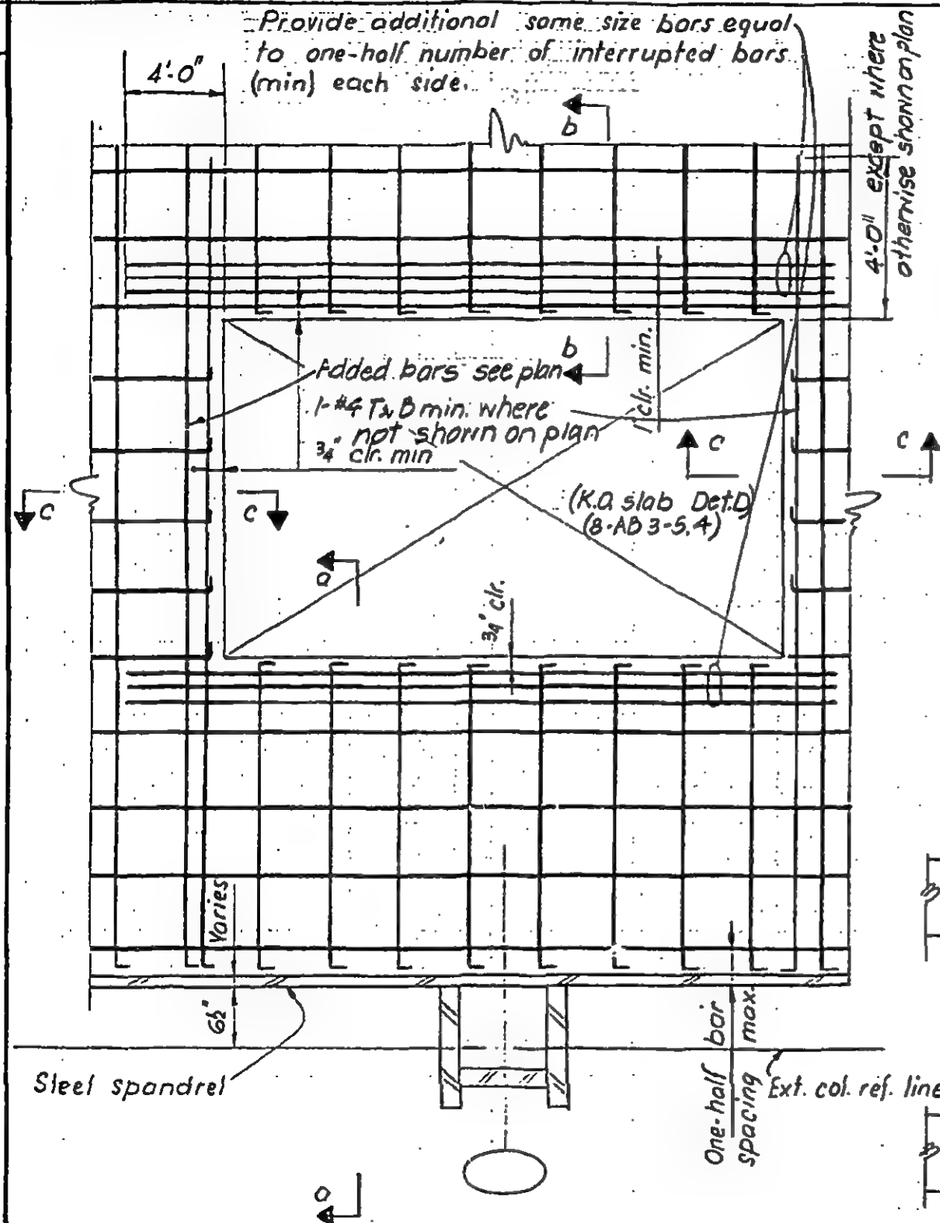
REVIEWED

8-AB2-21.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

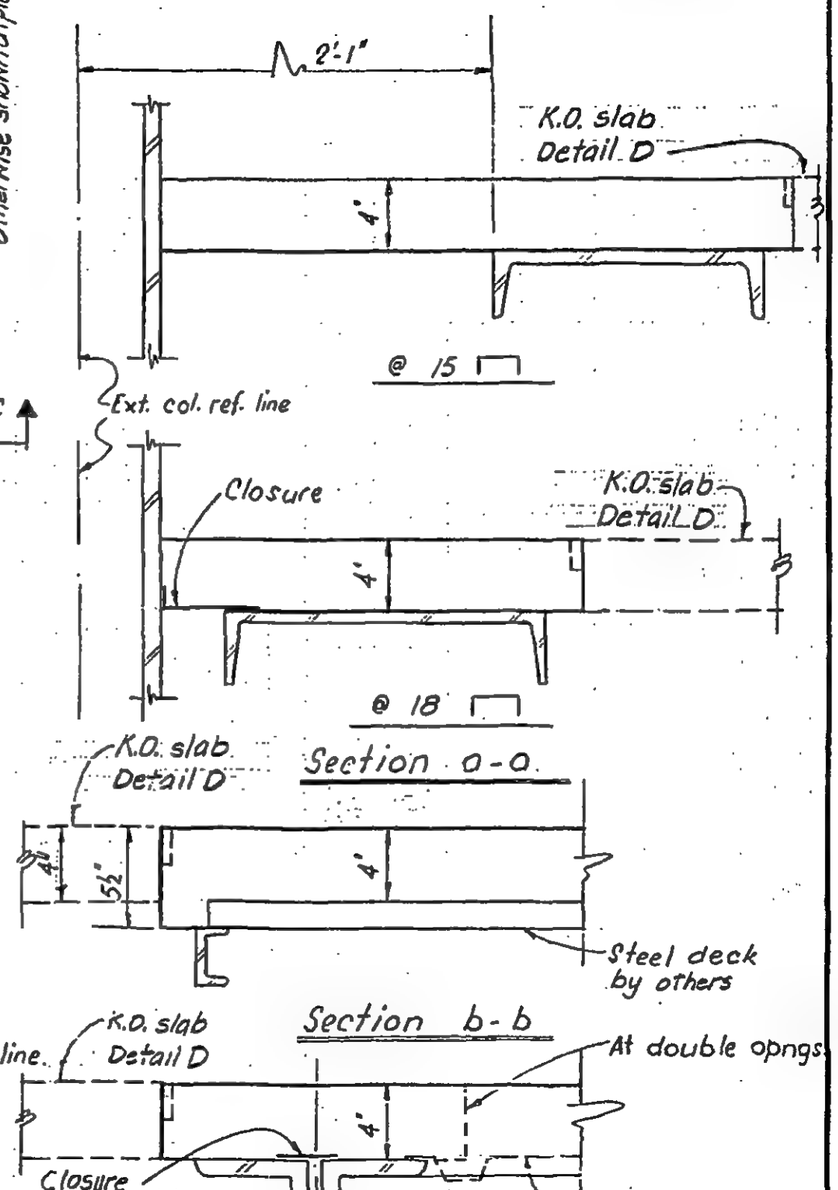
PROJECT: THE WORLD TRADE CENTER | TITLE: DETAIL AT OPENINGS NEAR EXTERIOR WALL | DATE: 3/19/70

REVISIONS



DETAIL B

DETAIL D as noted



8-AB 2-21.2"

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T O'Neill

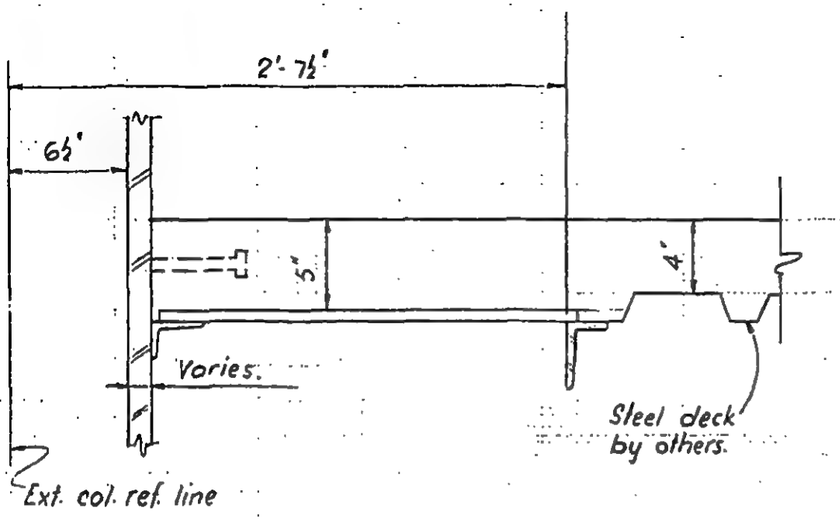
DRAWN: T. Terrelonge

REVIEWED:

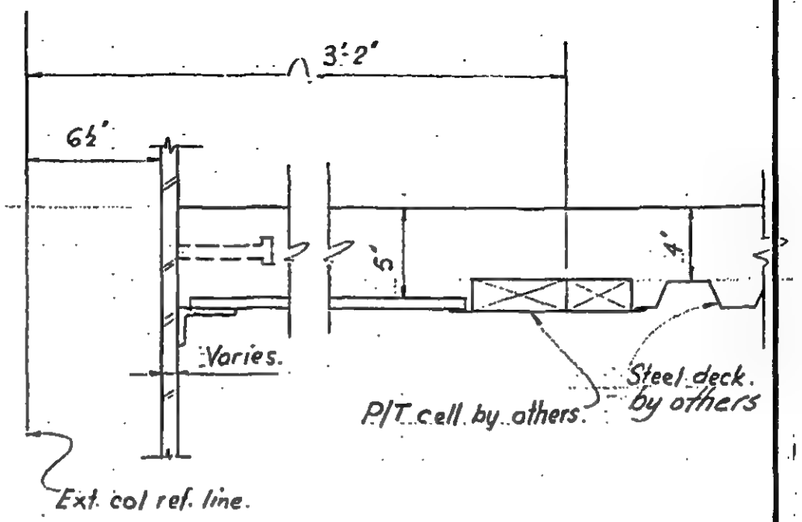
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU EXTERIOR WALL. | DATE: 3-19-70

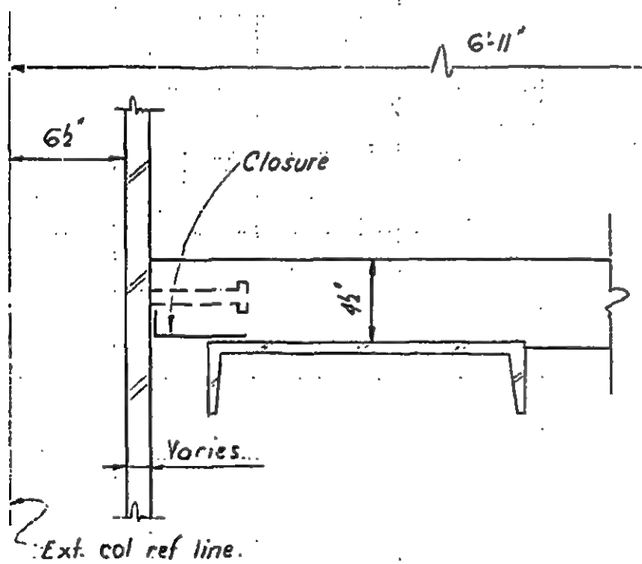
REVISIONS



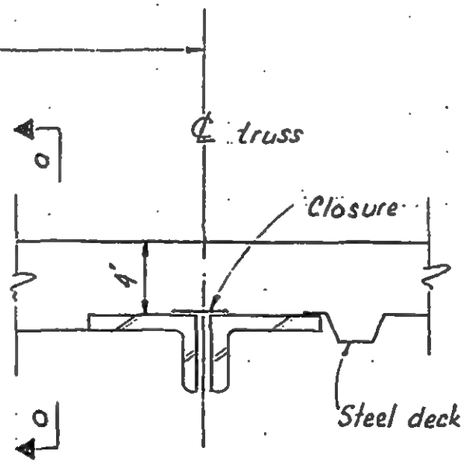
Section A-A.

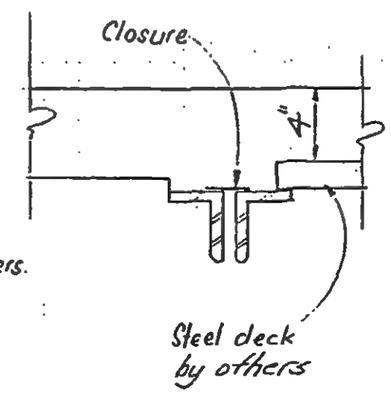


Section A1-A1.



Section B-B.





Section C-C.

Note: Reinf. not shown.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

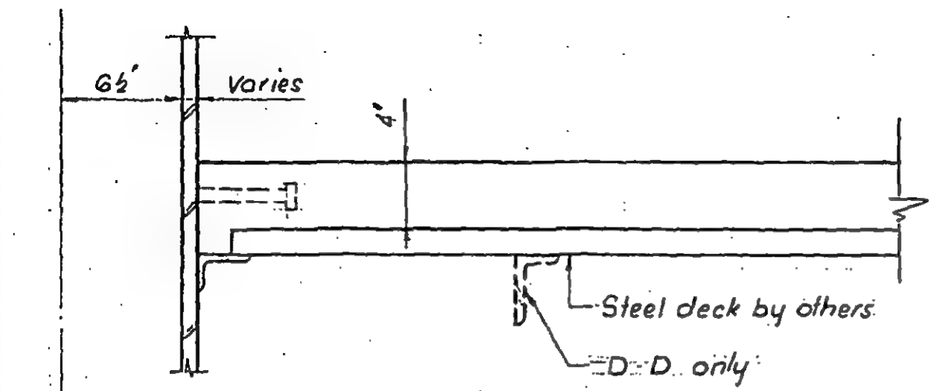
DESIGNED: T. O'Neill
DRAWN: T. Terrelonge
REVIEWED:

8-AB2-22.1

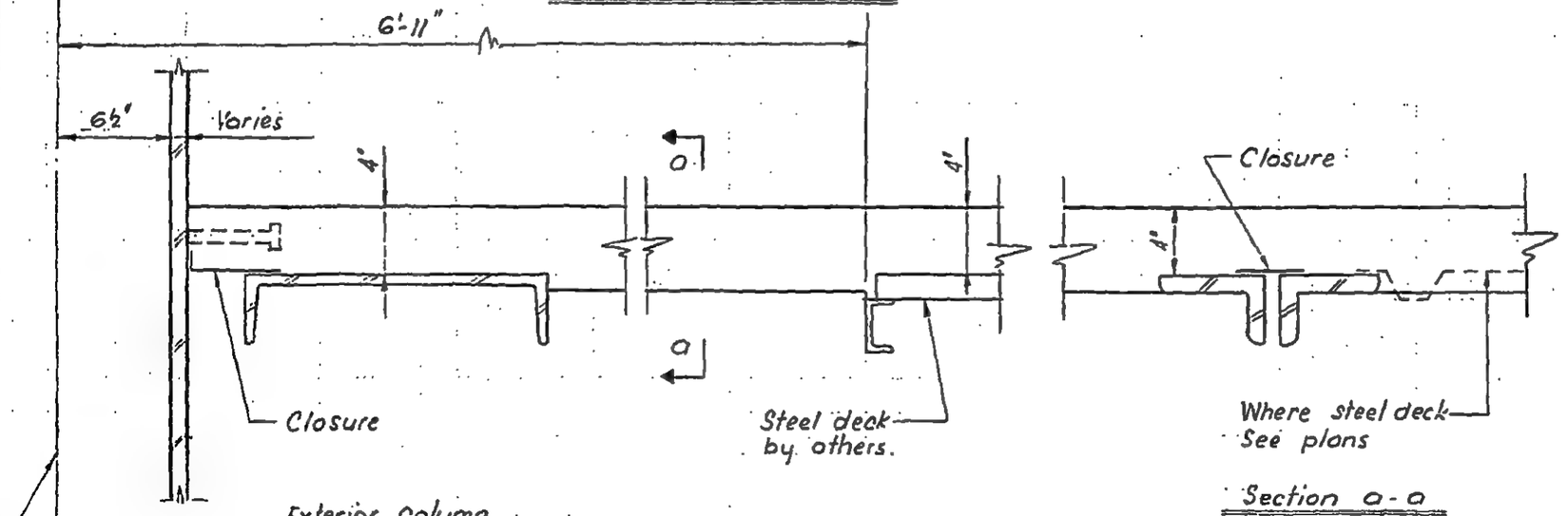
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU EXTERIOR WALL | DATE: 3-19-70

REVISIONS



SECTION C-C & D-D



Section o-o

SECTION E-E

Note: Reinf. not shown.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T. O'Neill
DRAWN: T. Terrelonge
REVIEWED:

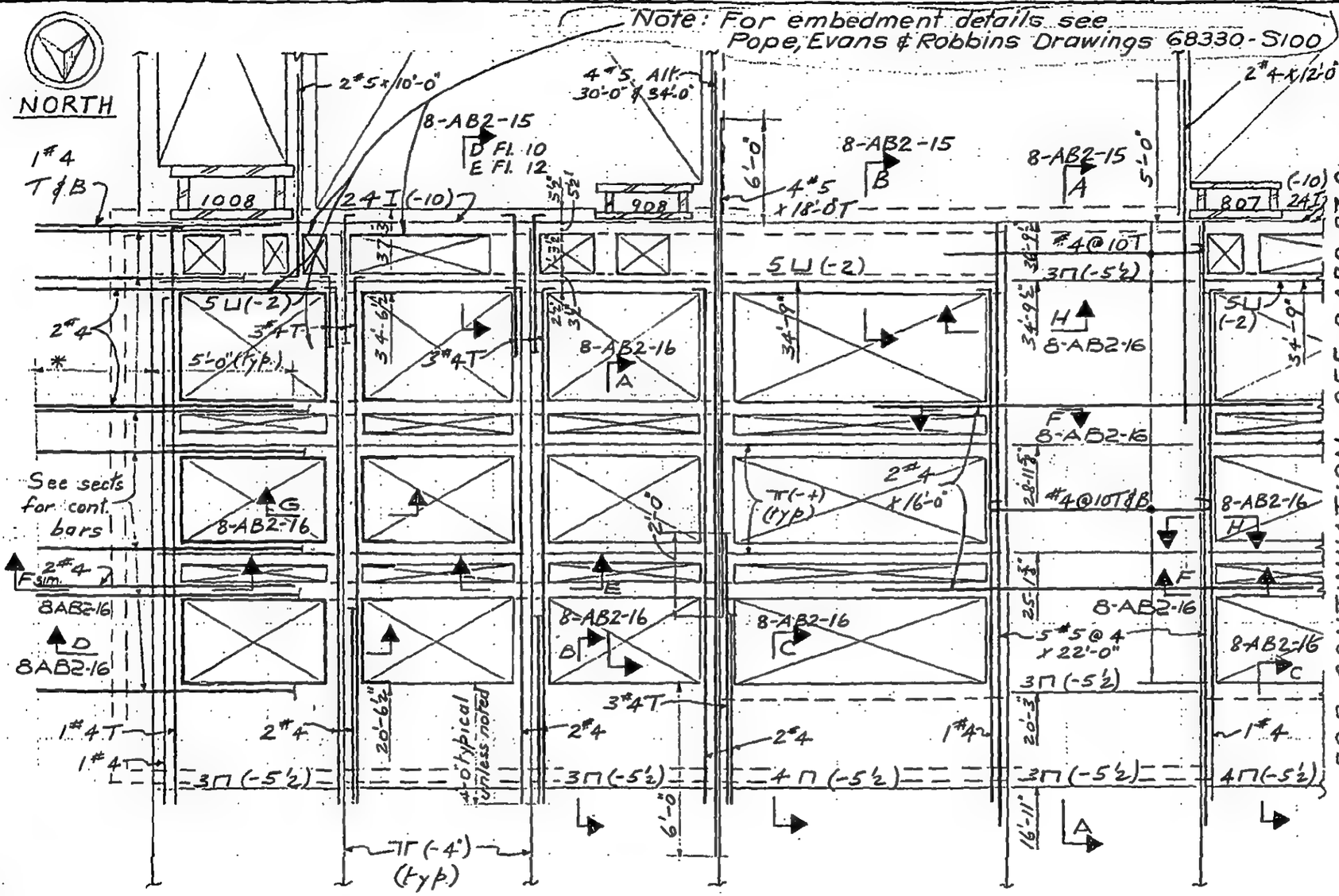
R-AR2-20.0

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: PART PLAN AT SPLICING CHAMBER | DATE: 3-19-70

REVISIONS
5/22/70

Note: For embedment details see Pope, Evans & Robbins Drawings 68330-S100



Note: For location of openings see Floor Plans – SCB-22 for Floor 10 and SCB-26 for Floor 12.

PART PLAN SPLICE CHAMBER AREA

* Use 4'-0" typical floor 10. See section BB 8-AB2-19 for floor 12.

Scale: 1/4" = 1'-0"

8-AB2-23-1

FOR CONTINUATION SEE 8-AB2-23-2

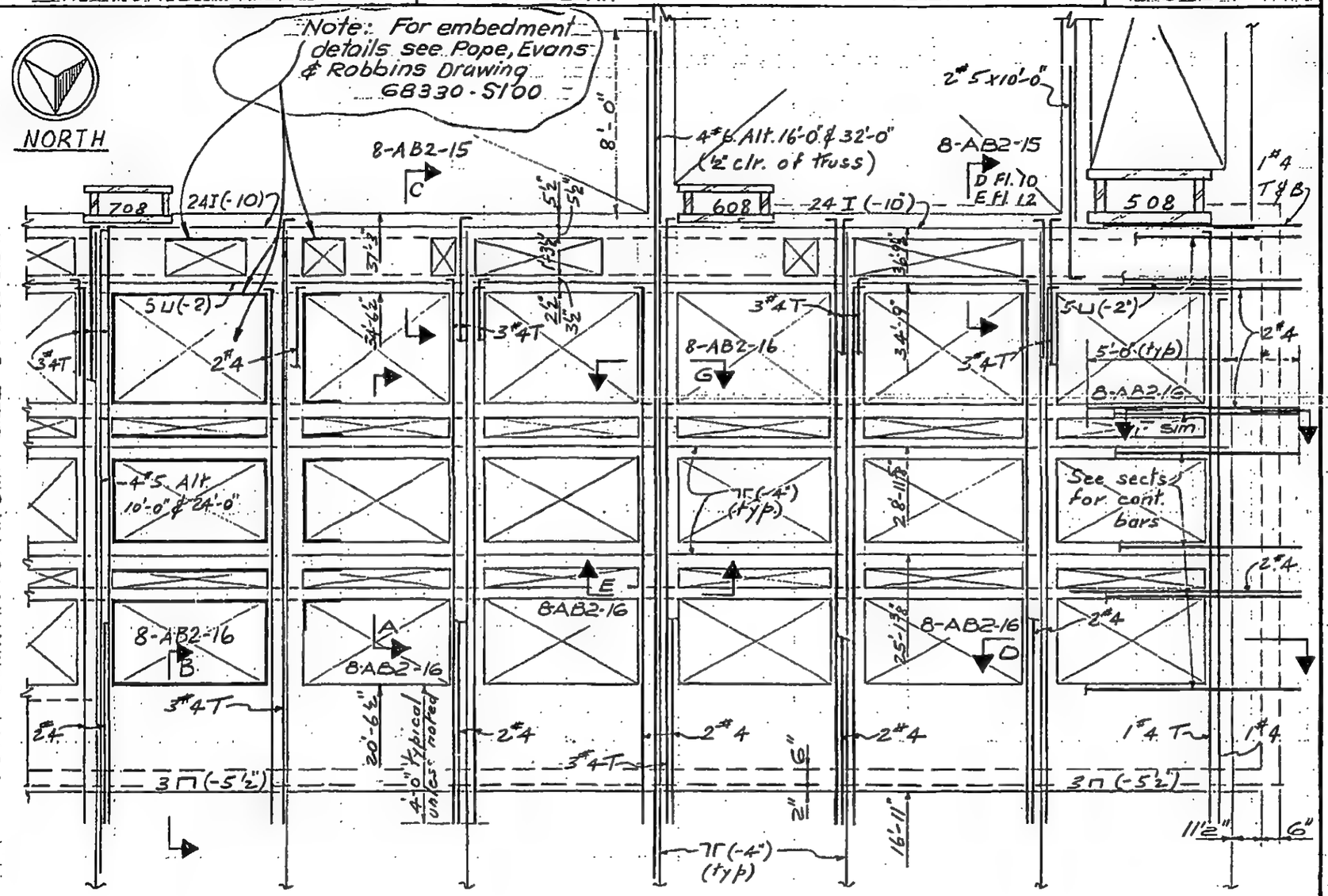
LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T.O'Neill
DRAWN: T.T. & T.O'N.
REVIEWED:

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: PART PLAN AT SPLICE CHAMBER | DATE: 3-19-70

REVISIONS
5/22/70



Note: For location of openings see Floor Plans — SCB-22 for Floor 10 and SCB 26 for Floor 12

PART PLAN SPLICE CHAMBER AREA

*Use 4'-0" typical floor 10. See section B-B 8-AB2-19 for floor 12.

Scale: 4" = 1'-0"

8-AB2-23.2

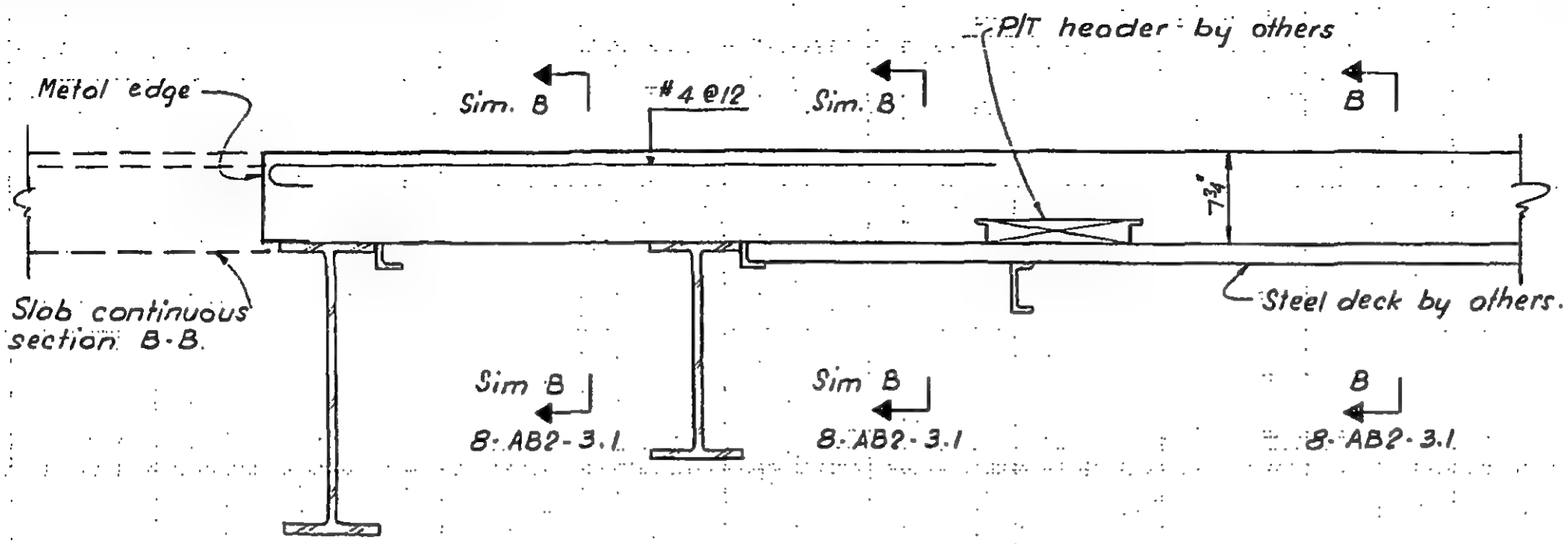
LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED T. O'Neill
DRAWN T.T. E.T.O.N.
REVIEWED

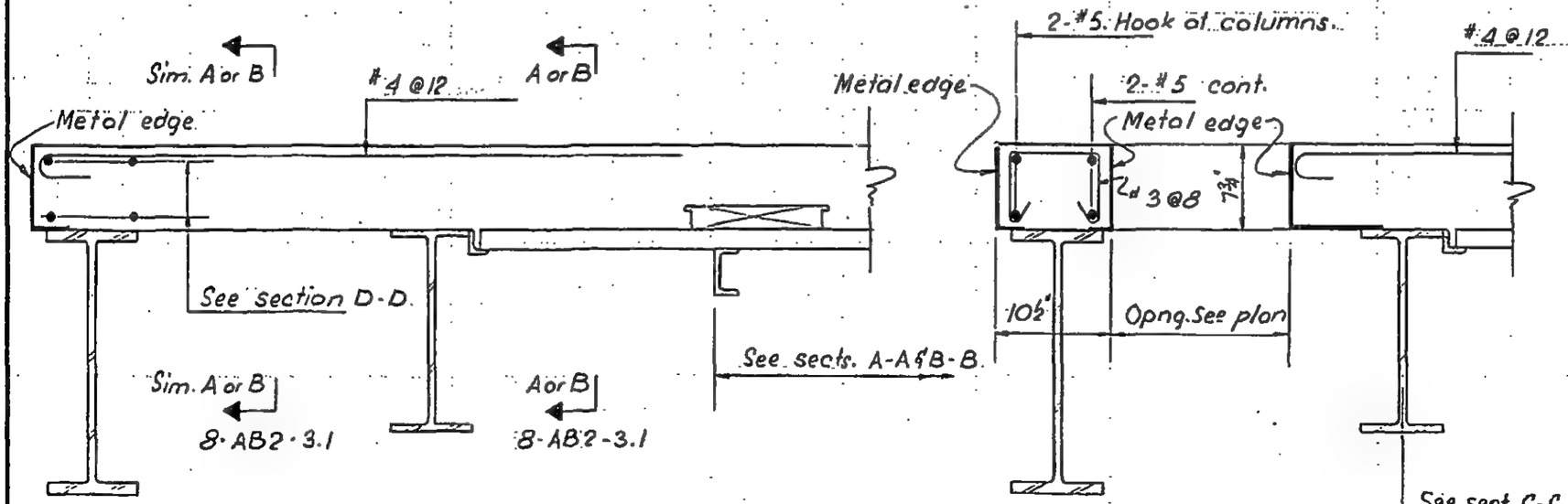
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU CORE WALL | DATE: 3-16-70

REVISIONS



SECTIONS A-A & B-B



SECTION C-C

SECTION D-D

Note: For reinf. not shown see plans, 8-AB2-3.1 & 8-AB2-7

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

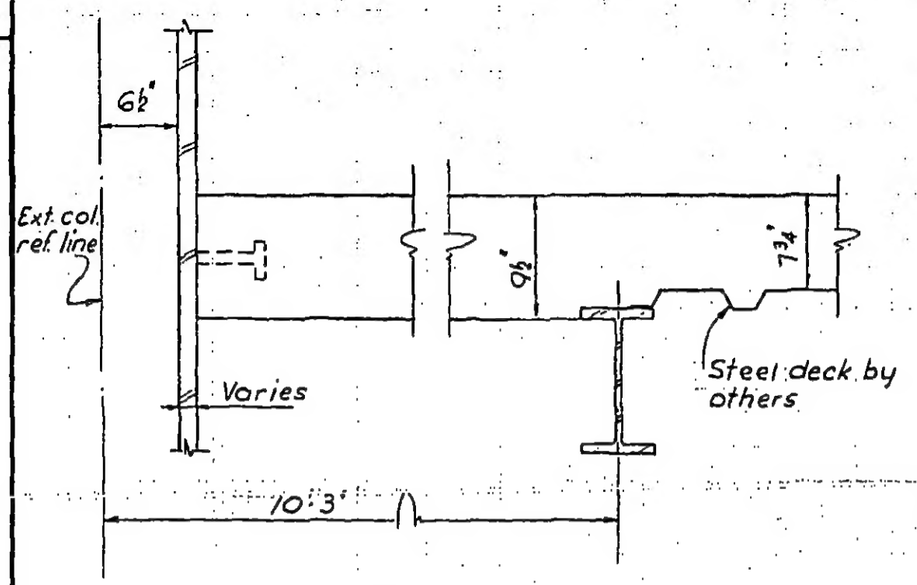
DESIGNED: T. O'Neill
DRAWN: T. Terrelonge
REVIEWED:

8-AB2-24

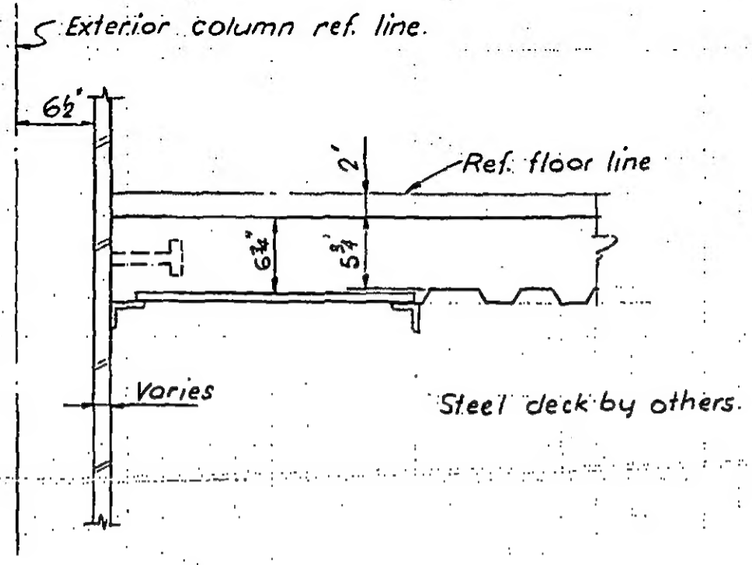
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU EXTERIOR WALL | DATE: 3-16-70

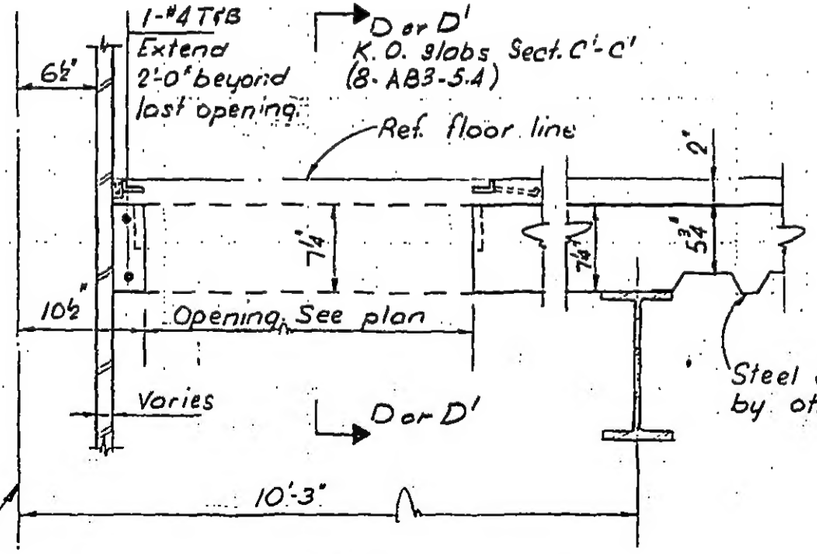
REVISIONS



SECTION A - A

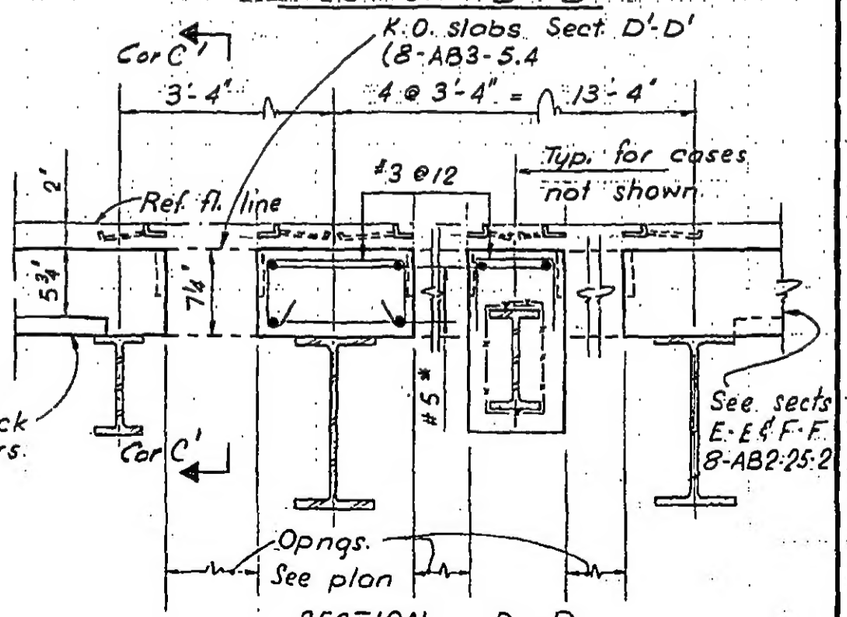


SECTION B - B



SECTION C - C

SECTION C'- C' as noted



SECTION D - D

SECTION D'- D' as noted

Note: For reinf. not shown see plans.

*Hook at ext. wall and extend 4'-0" past opening.

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED T. O'Neill.

DRAWN T. Terrelonge.

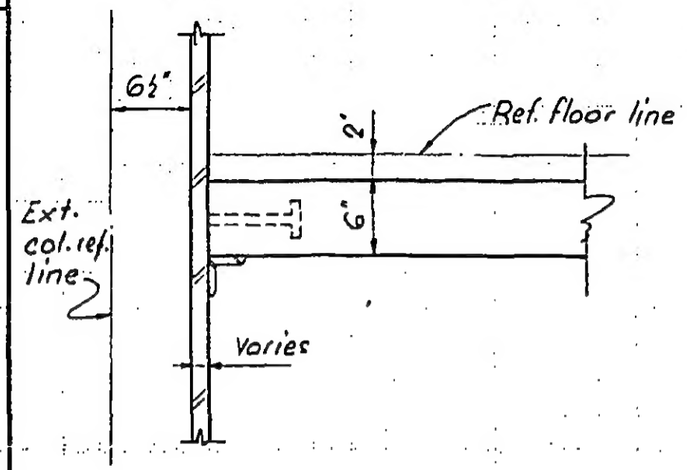
REVIEWED

8-AB2-25.1

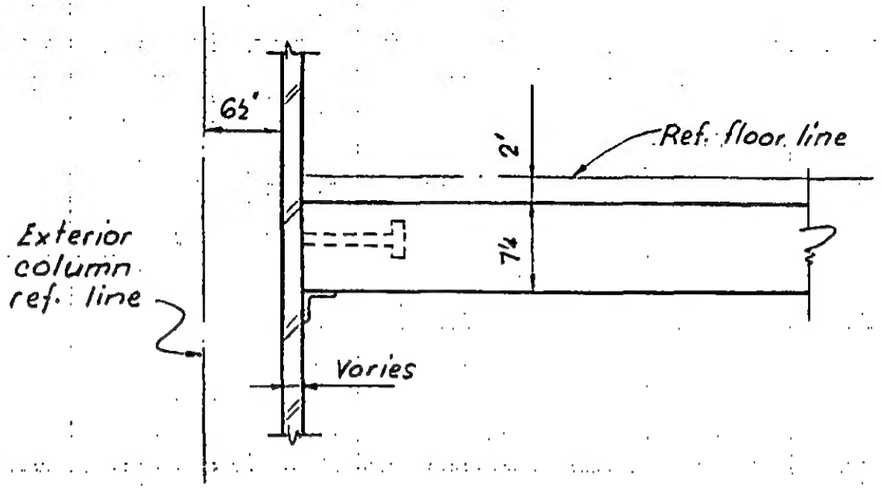
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU EXTERIOR WALL | DATE: 3-16-70

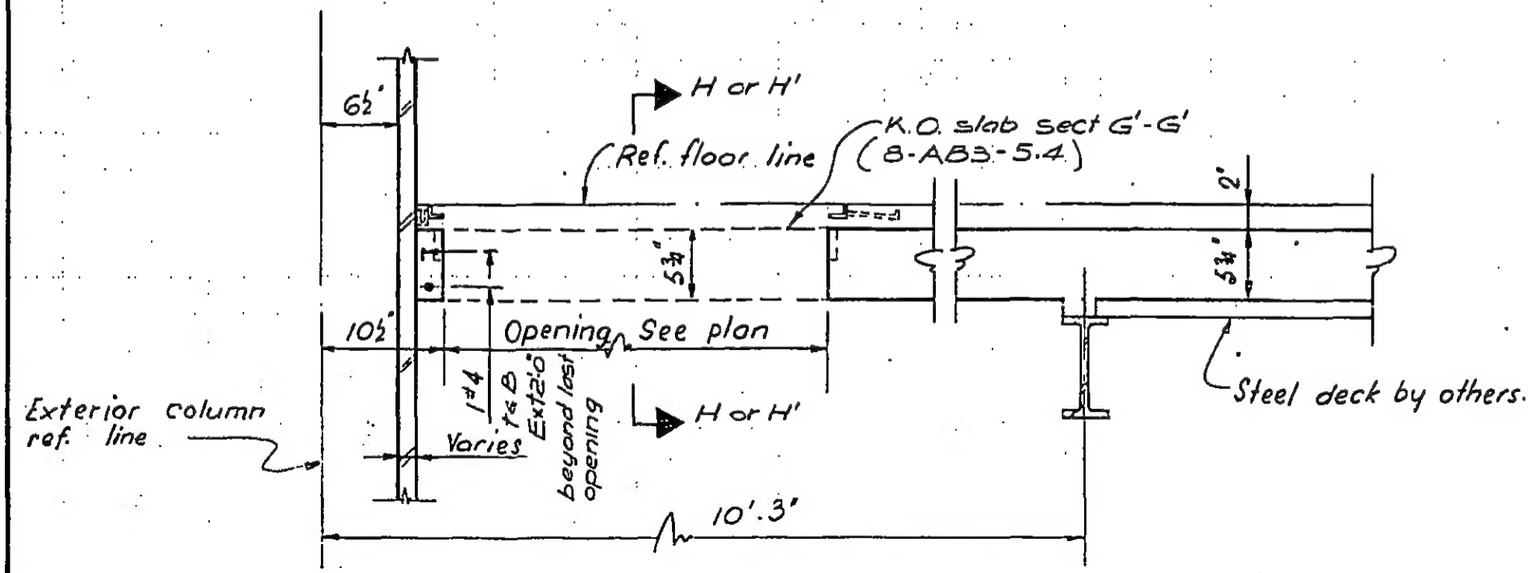
REVISIONS



SECTION E - E



SECTION F - F



SECTION G - G

SECTION G'-G' as noted

Note: For reinf. not shown see plans.

LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED T O'Neill

DRAWN T. Terrelonge

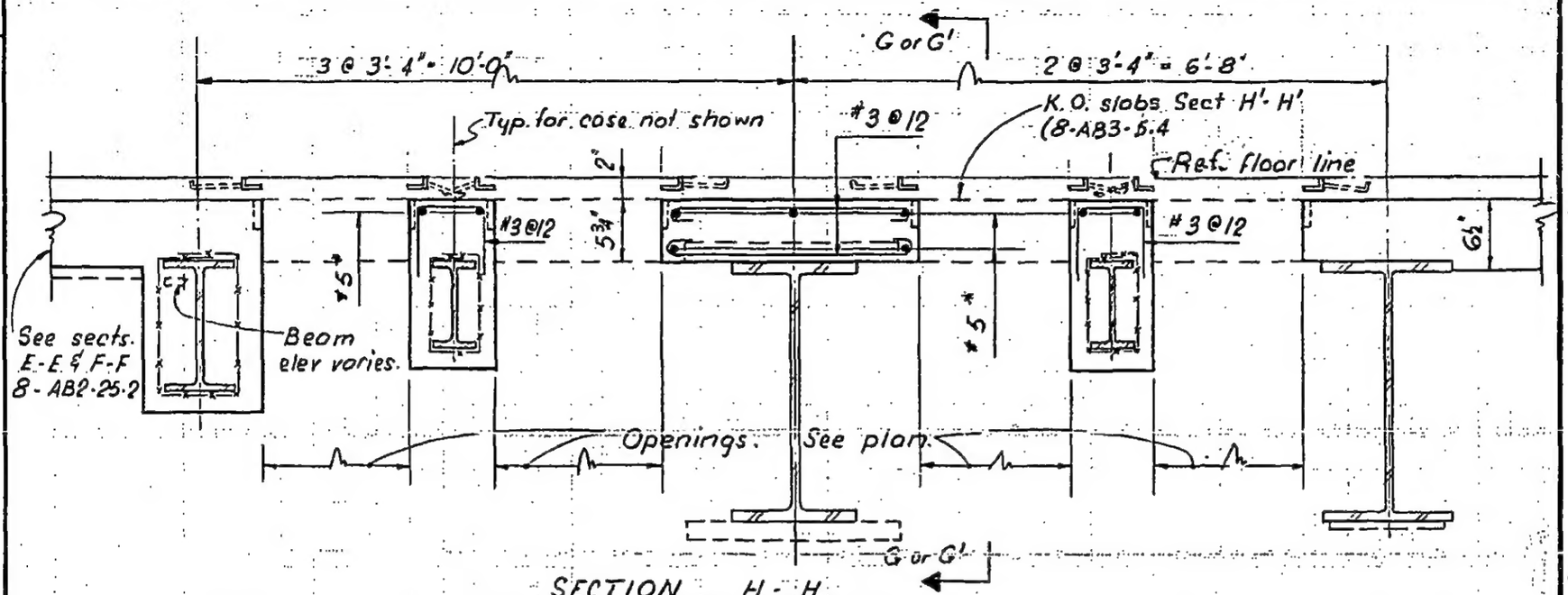
REVIEWED

8-AB2-25.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TYPICAL SECTIONS THRU EXTERIOR WALL | DATE: 3-16-70

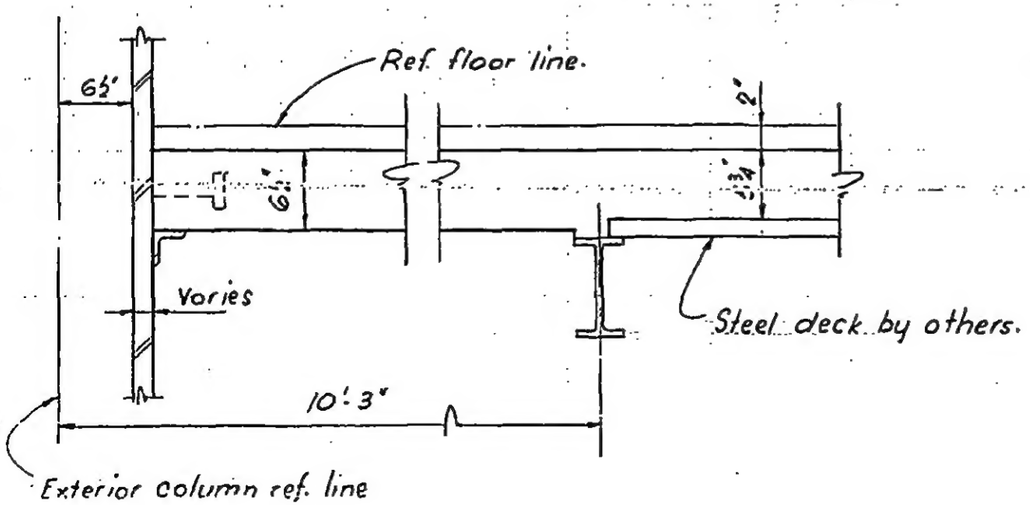
REVISIONS



SECTION H-H

SECTION H'-H' as noted

* Hook at exterior wall and extend 4'-0" past opening



SECTION K-K

Note: For reinf. not shown see plans.

8-AB2-25.3

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED: T. O'Neill
DRAWN: T. Terrelonge
REVIEWED:

1-1062-LERA